



NASA CONTRACTOR REPORT - 174811

MEAN VELOCITY AND TURBULENCE MEASUREMENTS  
IN A 90° CURVED DUCT WITH THIN INLET  
BOUNDARY LAYER

R.A. Crawford, C.E. Peters, J. Steinhoff, J.O. Hornkohl,  
J. Nourinejad, and K. Ramachandran

University of Tennessee Space Institute  
Tullahoma, Tennessee

Final Report  
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## SUMMARY

The experimental database established by this investigation of the flow in a large rectangular turning duct is of benchmark quality. The experimental Reynolds numbers, Deans numbers and boundary layer characteristics are significantly different from previous benchmark curved-duct experimental parameters. The turbulent entrance boundary layer case, at  $R_{ed} = 328,000$ , provides an incompressible flowfield which approaches real turbine blade cascade flow characteristics. Although incompressible, the turbulent boundary layer thickness of 5 to 10 percent of duct half-width provides a very challenging flowfield for CFD code development and validation. The experimental results present all three components of mean velocity and turbulence intensity for six measurement planes in the  $90^\circ$  turning duct. The experimental data is available on magnetic tape at the NASA-Lewis Research Center.

## 1. INTRODUCTION

The advancement of turbine engine durability and efficiency depends upon design improvements in stage loading, operating temperatures and material properties. Improved fluid mechanics and heat transfer codes are key to design advancement of blade loading and temperature distribution. The curved duct flowfield results from the combined effects of compressibility, viscosity and heat transfer, and it is one of the most difficult three-dimensional flows to model accurately. A requirement for developing improved fluid dynamics codes is the benchmark experimental data base, which provides a calibration standard for development and validation of fluid mechanics codes.

The investigation reported herein is the study of internal flow in a large rectangular turning duct, with a 25.4 cm (10 in) square cross section. The objective of this investigation is to provide a complete set of benchmark data for the flow within a large rectangular turning duct. These data are to be used to evaluate, verify, and/or modify three-dimensional internal viscous flow models and computational codes for predicting the flow in turbine engines. The experimental and analytical efforts were conducted under a coordinated multitask contract.

The data acquired in the three-dimensional viscous flowfield includes pressure and velocity distributions for comparison with the flowfield computed using three-dimensional viscous flow computer codes. The measurements constituted a detailed study of the sidewall, endwall, and convex-sidewall/flat endwall corner regions of the duct, for isothermal, adiabatic flow. All measurements were taken at two Reynolds numbers that provided both laminar and fully turbulent boundary layer flows approaching the duct turn. The flow velocities for both Reynolds numbers were low enough to remain well within the incompressible Mach number range.

## **2. EXPERIMENTAL TASK**

Flow in curved ducts is representative of a wide range of real flowfields such as are found in turbomachinery. The evaluation of the complex three-dimensional flowfield in a turbine stage is complicated by the viscous effects which dominate the heat transfer distributions. A clear understanding of the three-dimensional boundary layer development in the curved duct is essential to the formulation and validation of computational fluid dynamics and heat transfer codes. This investigation expands the curved duct experimental work of Taylor, Whitelaw and Yianneskis (ref. 1) to higher Reynolds numbers and Dean numbers. The resulting experimental data base provides a CFD baseline data set that is closer to real turbine blade passage flowfields. In this section the experimental facility and instrumentation systems are described in detail. The design, fabrication and calibration of all experimental equipment was conducted with primary emphasis on data quality to assure benchmark results.

### **2.1 Duct Flow Facility Description**

The experimental facility design features modular tunnel components which allow flow measurements every  $15^\circ$  in the  $90^\circ$  bend and at one duct width upstream and downstream of the bend. The 25.4 cm (10 in) square cross section tunnel is designed with a 13 to 1 area ratio bell mouth, contoured to provide uniform flow, and is powered by an induced-draft, variable speed, variable pitch, six-bladed fan. The tunnel is designed for incompressible flow and will produce, based on variable inlet length, Reynolds numbers of 50 to  $350 \times 10^3$  at the entrance of the  $90^\circ$  bend for tunnel velocities of 4.0 to 24 m/sec (13 to 79 ft/sec). These two flow conditions represent laminar and fully turbulent boundary layer profiles at the entrance to the  $90^\circ$  bend. Figures 1 and 2 show the details of the assembled duct.

Inlet Transition The inlet transition section is designed to provide a uniform flow profile to the test section. The walls are made from formed metal with a bellmouth shape. The bellmouth has an overall length of 101.6 cm (40 inches), with a 91.44 cm

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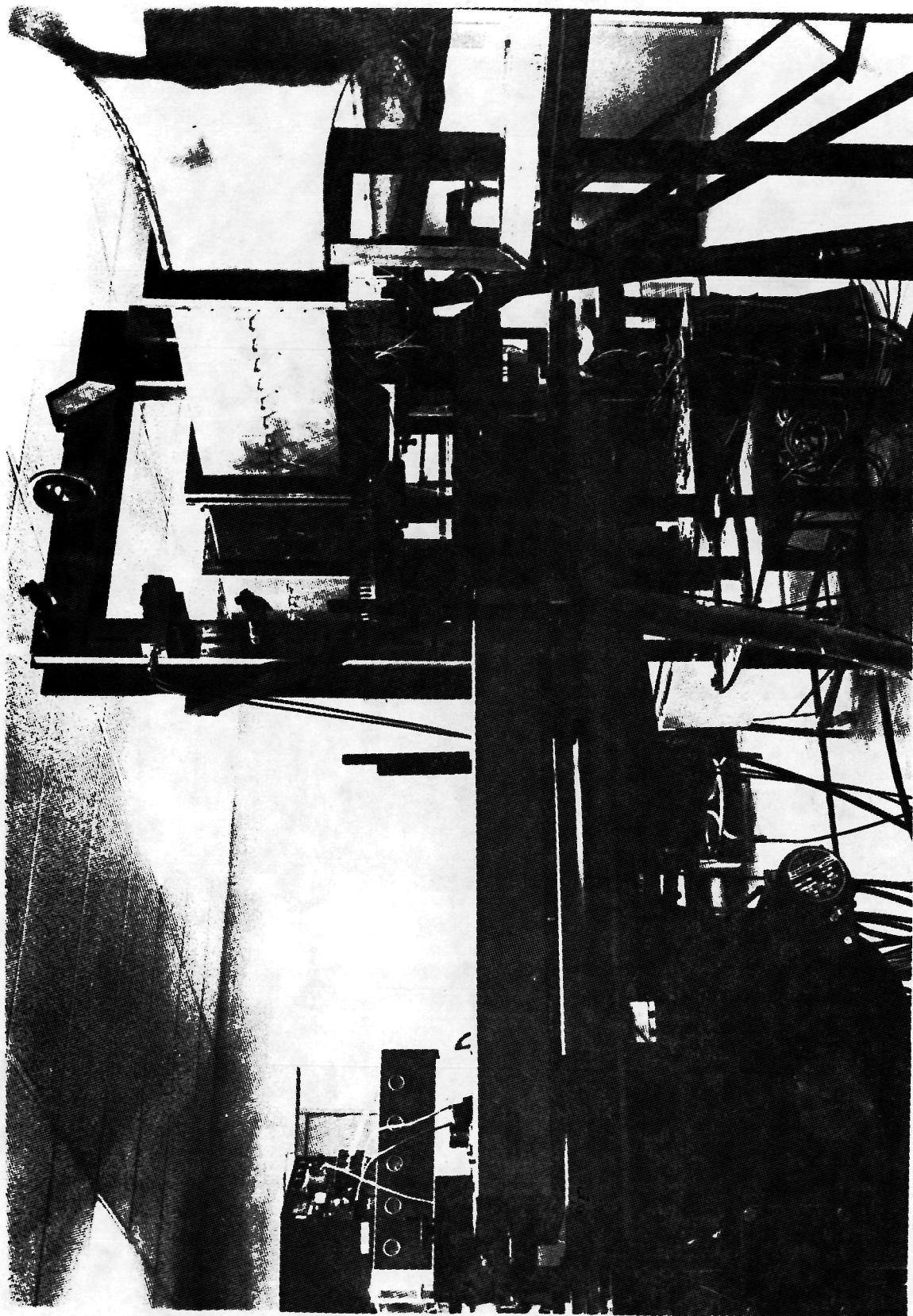


Figure 1. Curved Duct Entrance Region and LV System

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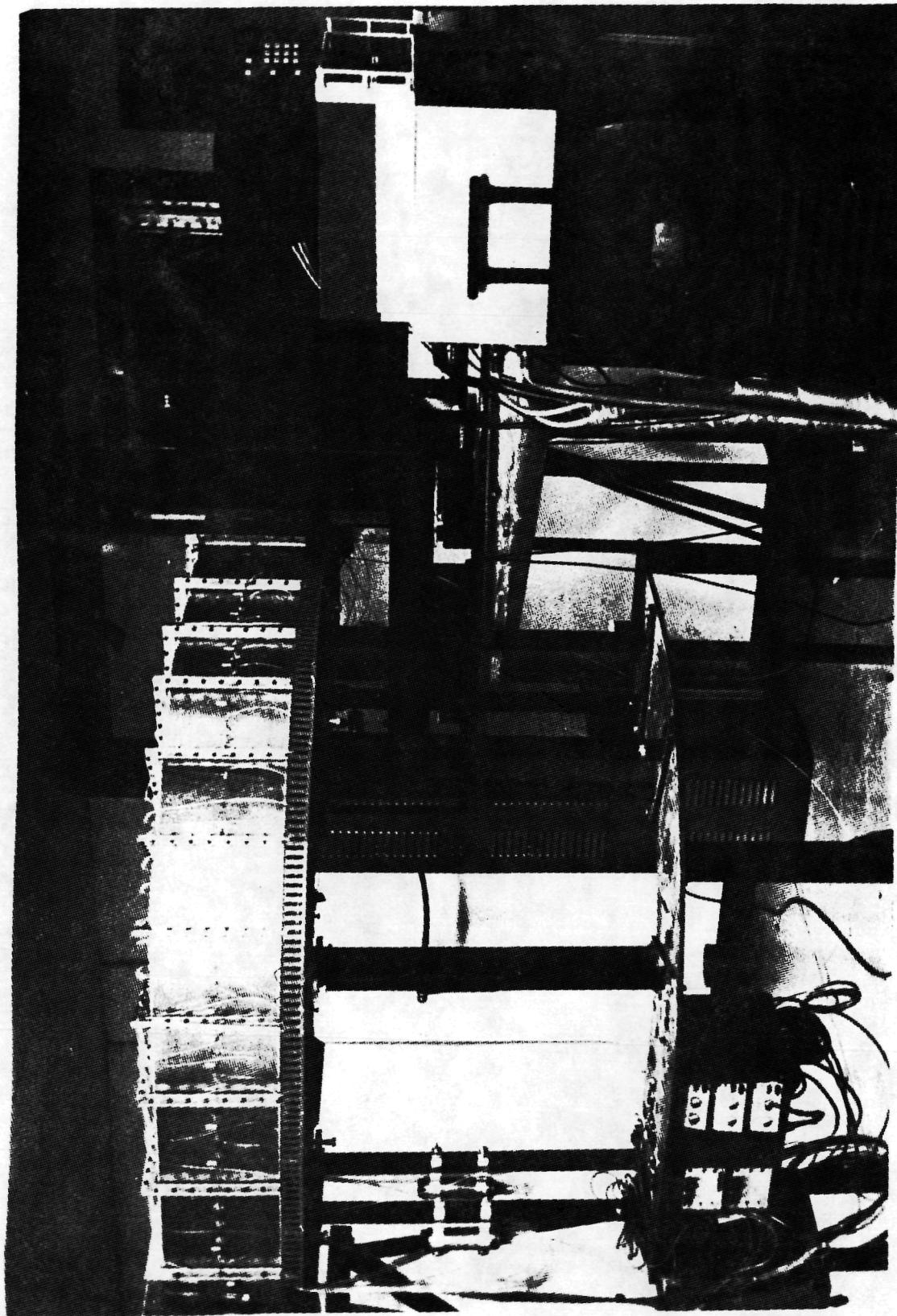


Figure 2. Assembled Curved Duct Test Section

(36 inch) square entrance and a 25.4 cm (10 inch) square outlet for a contraction ratio,  $A_1/A_0$ , of 13. The honeycomb panel acts as a flow straightener and smoother to provide a smooth, laminar core flow into the duct. An 8 x 8 mesh screen is stretched across the bellmouth inlet upstream and downstream of the honeycomb panels. The honeycomb and screens at the entrance, as well as the suction type air supply design are intended to provide the smoothest, most uniform core flow possible at the duct entrance.

The bellmouth contour was selected on the basis of fluid dynamic calculations to provide an essentially uniform one-dimensional core flow with developing boundary layers entering the test section. Smooth flow acceleration is achieved by contouring the inlet to avoid large negative axial pressure gradients. An approximate calculation predicted the boundary layer thickness at the bellmouth exit of 1.25 mm to 2.5 mm (0.05 to 0.1 in). Therefore, the boundary layer at the start of the bend is mainly produced by flow over the straight duct extension sections, for both the laminar and turbulent boundary layer flow conditions.

The inlet extension section was designed to provide additional length upstream of the test section to allow development of a fully turbulent boundary layer at the start of the bend. This section is straight, 50.8 cm (20 inches) long and has a 25.4 cm (10 inch) square cross section. Flanges are provided for ease of installation and removal, thus simplifying duct alterations to facilitate changing the flow characteristics. One of these interchangeable sections is configured as an instrument segment, containing an optical access window module, an instrument probe module, and a 24.1 cm (9.5 inch) long extension module. This modular section can be interchanged or rearranged to permit inlet conditions to be measured at 25.4, 50.8, 76.2 or 101.6 cm (10, 20, 30 or 40 inches) upstream of the bend entrance and exit conditions to be measured at 25.4 cm (10 inches) downstream of the bend exit.

The instrument module includes the Laser Velocimeter access window as a separate piece. Construction of the instrument module is similar to the extension section, i.e. flanged and made from 6.35 mm (0.25 inch) thick aluminum plates. The basic difference

is the inclusion of the optical access window module and a traversing probe mounting panel which allows pressure measurements, temperature measurements, or hot-wire measurements, in the plane of the view window. Interchanging the instrument module with different panel modules permits flow conditions and profiles to be measured at the bend entrance, or at any of 5 evenly spaced stations in the bend. The view window module is constructed for application with either the curved instrument module or the duct-extension instrument segment. The window section was assembled from four (4), beveled 0.635 cm (0.25 inch) thick by 1.27 cm (0.5 inch) wide by 26.67 cm (10.25 inches) long flat glass panels mounted in an aluminum frame that bolts to the upstream end of the instrument module. The glass windowed module is arranged so that there is a clear view from corner-to-corner on all four walls of the test duct. Flat window width has been minimized within the operating constraints of the Laser Velocimeter system.

Although flat windows were used along the convex and concave walls the resulting variation in wall curvature is insignificant. These 1.27 cm (0.5 in) wide flat panels were, by design installed so the window edges set on the arc of the concave and convex sidewalls. resulting at window center, in only a 0.004 cm (0.002 in) maximum variation from the desired uniform 45.7 cm (18 in) radius of the convex sidewall, and 0.003 cm (0.001 in) maximum variation from the desired 71.1 cm (28 in) uniform radius of the concave sidewall

Induced Draft Fan, Exhaust Transition The exhaust transition section is designed to diffuse the flow and provide a uniform suction for moving the air through the test section. The exhaust section is 335.28 cm (132 inches) long and transitions from a 25.4 cm (10 inches) square cross section at the downstream extension exit to an 82.55 cm (32.5 inch) diameter circular cross section designed to match the diameter of the fan mounted at the exit of this section.

The selected, induced draft fan is a 6 bladed, adjustable pitch, 81.30 cm (32 in) diameter air propeller. The blades and hub are separate aluminum alloy castings, machine matched and balanced. The propeller is belt driven by a variable-speed.

electric motor mounted below the fan. Both the motor and propeller mounts are isolated from the duct supports, to inhibit any transfer of vibrations from the fan. Independent mounting arrangements were used to isolate exhaust transition section and the test section from fan induced vibrations and pressure fluctuations. Vibration isolation was provided at the flange connection between the exhaust transition section and downstream extension section, as well as between the exhaust transition section and the motor housing.

Following facility construction, an extensive shakedown and calibration program was conducted to confirm flow quality in the inlet section and assure no flow separation in the diffuser section. Both laminar and turbulent inlet boundary layers were validated by hot-wire measurements. Flow uniformity in the inlet section was confirmed by pressure and laser velocimetry surveys.

## 2.2 Instrumentation Description and Calibration

The primary instrumentation was designed for non-intrusive flow measurements utilizing a three-component, laser velocimeter (LV) and wall static pressure gauges. The LV utilizes two color beams and Bragg diffraction beam splitting/frequency shifting to separate the three simultaneous, orthogonal, velocity vector components. The LV signal processors determine the digital values of velocity from the seed particles crossing the laser beam probe volume. To improve and speed up digital data acquisition, the LV processors were designed around an S-100 bus Z-80 microprocessor which provides on-line, near-real time data reduction. This on-line data was acquired and recorded for off-line detailed analysis. To qualify the measurements as "benchmark" data, the LV data was compared with both pitot probe and hot-wire anemometer measurements for flow conditions which permit comparisons.

Total and static pressure distributions were measured at the selected measurement stations and along the duct walls. Total and static pressures measured at the exit of the duct inlet section were used to control the duct flow. Static pressure ports distributed along the centerlines of all four duct walls provided wall static pressure profiles along

the side and end walls of the duct as shown in Figure 3.

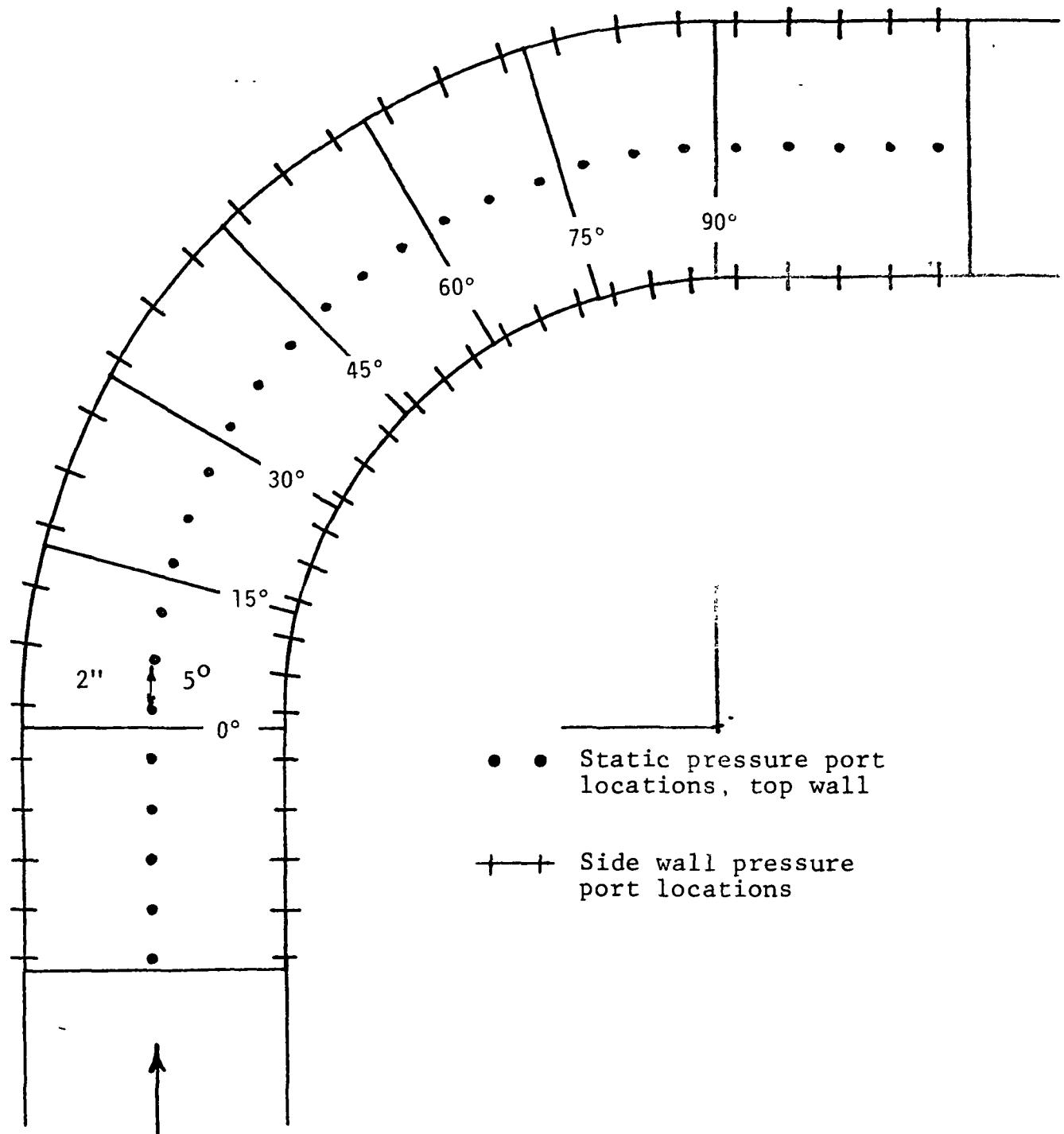
Nominal bulk flow velocities of 6.0 and 20 m/sec. (20 and 66 fps) were selected to provide the laminar and turbulent boundary layer flows at the entrance to the turn. For these velocities, the pressure differentials to be measured are 0.10 and 2.5 cm of  $H_2O$  (0.04 and 0.95 in. of  $H_2O$ ). To provide accurate measurements within this range, a Validyne DP103 differential pressure transducer for ultra low range was selected. This transducer has a combined accuracy of  $\pm 0.5$  percent of the calibrated span. The span can be altered by inserting different diaphragms.

The full scale reading corresponding to the low pressure range measurements is 1.0 cm in  $H_2O$ , and the scale reading corresponding to the high pressure range was selected to be 4.0 cm  $H_2O$ . Since a large number of static pressure measurements were necessary, two 48 port Scanivalve pressure scanners were used in conjunction with the Validyne transducers, to multiplex the static pressure readings. Therefore, all the pressure measurements were performed with three (3) similar pressure transducers, one for each scanivalve and one monitoring the inlet total to static pressure difference.

Hot-wire measurements were made periodically in the flow for comparison with the LV velocity determinations. The hot-wires were calibrated in a steady, low turbulence flow and the direct non-linearized output of the anemometer was recorded. From these data, statistically defined velocity measurements were determined and compared with LV measurements from the same flow, to ascertain possible biases in the LV measurements.

#### Laser Velocimeter System

The laser velocimeter (LV) developed at UTSI and used on the curved duct flow experiments may be described as two primary systems: (1) optical, and (2) electronic (ref 2.). The optical system consists of the laser, parallel beam color separator, two dimensional Bragg cell, lens train, lens train housing, photomultiplier tubes, and mill bed scanning system. The electronics system consists of Bragg cell drivers and power amplifiers, signal separator and mixer, simultaneous signal detector, signal measuring



**Figure 3. Duct Static Pressure Port Location**

electronics, data acquisition computer, and a scan position control system. The LV system was designed to measure three orthogonal components of velocity and to scan over a 25.4 x 25.4 cm cross section with a spatial resolution of approximately  $\pm .25$  mm.

A sketch of the optical system is shown in figure 4. A Lexel Corp. Model 95-2 Ar<sup>+</sup> laser was used in the LV system. This device produces approximately 2 watts of power in all line operation. It requires water cooling and 208 V, 3-phase, 30 amps/leg electrical service. The system used the 488 nm and 514.5 nm lines in LV operation. Guaranteed optical power for the 488 nm line is 0.7 watts and that for the 514.5 nm line is 0.8 watts.

The color separator is a prism-mirror assembly designed at UTSI. Its function is to separate the input multicolor laser beam into a parallel set of beams which can be adjusted in terms of spatial separation and position relative to the input beam. The color separator consists of two glass dispersion prisms mounted such that the beams are incident on the prism surfaces at Brewster's angle to minimize reflections. The first prism provides the initial color dispersion. The refracted dispersed beams are reflected by a first surface mirror to a second prism which further spreads the beams and reorients each beam such that it is parallel to the original input beam. The intermediate mirror and prisms are adjustable in order to vary beam separation and output position relative to the initial beam direction.

The parallel beams from the color separator are directed to a single two-dimensional Bragg cell which is used to split and frequency shift the parallel input beams. Each input beam is split into four beams of equal intensity originating from a common point. For a single Bragg cell each set of split beams appears to originate and propagate in a common reference plane. For a two-dimensional Bragg cell, each set of split beams appears to originate at the apex of a pyramid. The two-dimensional Bragg cell is a small water tank containing two x-cut quartz crystal transducers mounted at right angles with respect to each other. Each crystal is made to oscillate in an odd overtone

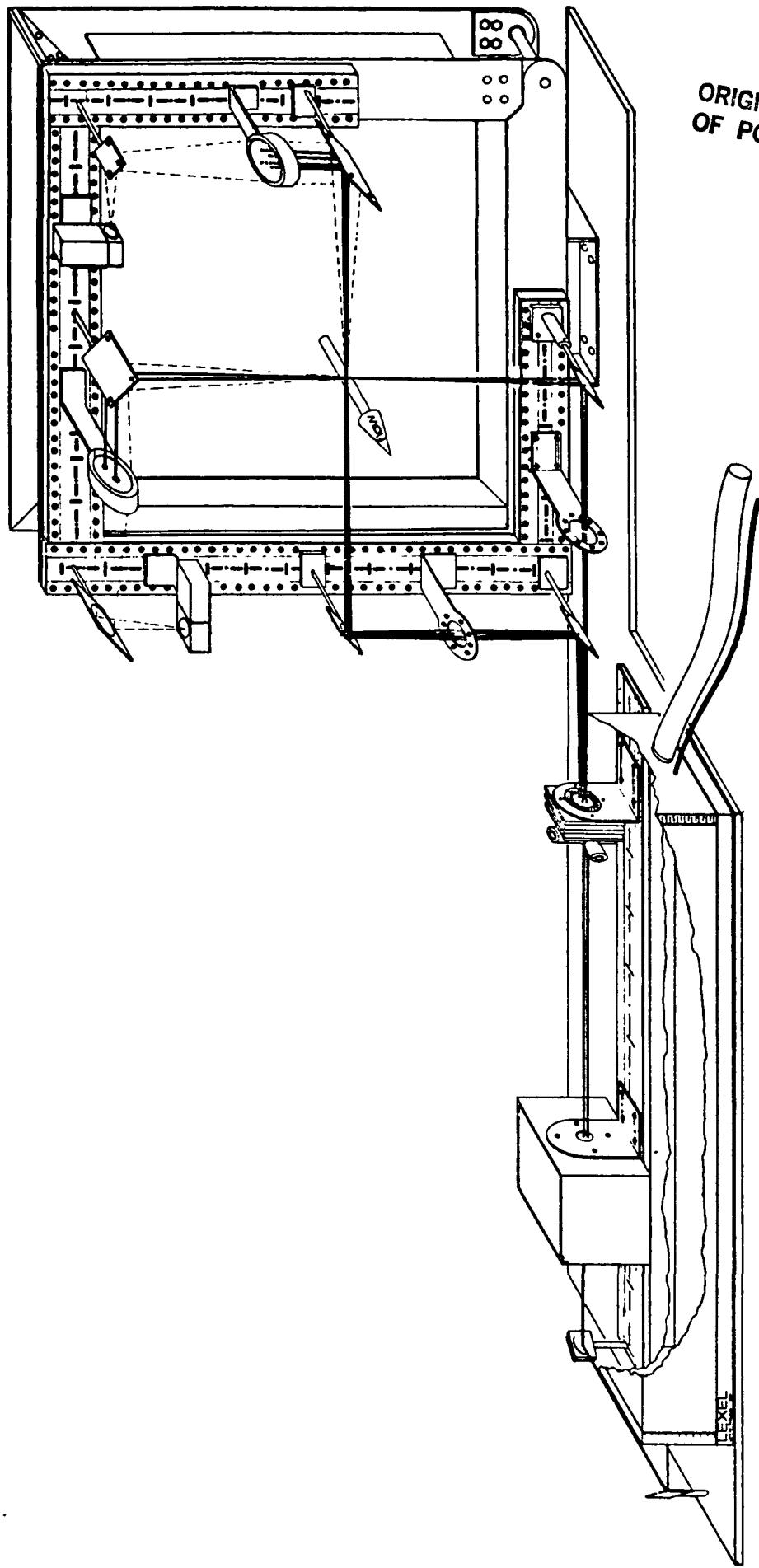


Figure 4. 3D LV Optical System Configuration

by a power amplifier referenced to a phase locked loop (PLL) oscillator. The frequency of each PLL is tunable in order that the transducer can be operated at its optimum frequency in a particular overtone. The output power of each power amplifier is adjustable from 0-10 watts and allows control of relative beam intensities. The quartz transducers are cut for 5 MHz fundamental frequencies and are operated in third and fifth overtones to produce frequency shifts in the beams of 15 and 45 MHz. Frequency differences in orthogonal beam pairs are 15 and 45 MHz. Non-orthogonal beam pairs have frequency differences and sums of 30 and 60 MHz. Signal currents generated at these frequencies are removed by electronic filters after photodetection.

After the beams are split, mirrors and beam stops are used to separate colors such that two orthogonal velocity components are measured with the 514.5 nm (green) beam and one component is measured with the 488 nm (blue) beam. All other split beams and colors are blocked. The green beams have velocity component identification and directions determined using the 15 and 45 MHz Bragg cell frequencies. The blue beam utilizes a 15 MHz Bragg cell frequency. After the colors are separated, a dove prism is used to rotate the blue beams such that the velocity component detected by the pair will be orthogonal to the component measured by the green beams.

A lens was used to make the green and blue beams focus to a common volume of incidence. Transmission paths were matched to ensure that the probe volumes are approximately the same dimension. While the geometry of the volume is that of two intersecting cylinders, the volume will be contained within a sphere of approximately a 200  $\mu\text{m}$  radius. Folding mirrors are used after the transmitting lens to assure sufficient adjustment for probe volume alignment.

The entire optical assembly was mounted in an I-beam channel assembly for mechanical stability. One side of the assembly was designed for quick removal in order to swing the system off the duct for alignment checks, etc. The channel assembly was mounted on a mill bed which had been modified to hold the channel and to produce a planar scan. The mill bed has positional resolution of 25  $\mu\text{m}$  and can be adjusted

manually or automatically with stepping motors under computer control.

Positioning of the mill bed system at each of the measurement locations in the duct was accomplished by rolling the system on casters to the desired position. The mill bed was locked in position with stabilizing jack screws which raised the mill bed off the caster wheels and leveled the entire system. Zero coordinate reference for the computerized system was defined at the center position of the window assembly which was used at all stations. This position was determined by using the optical system with the blue and green beams to locate the window reference.

### LV Data Acquisition

The electronics hardware associated with signal measurement and data acquisition is described in this section. Velocity was acquired by three laser velocimeter burst counters. The fringe counts can be programmed from 2 to 255 which allows the operator to match the fringe count to the number of fringes in the LV probe volume. Each burst counter is actually a combination of two time period counters, each of which performs an average signal period measurement. These period counters are started simultaneously, but one counter, called the short counter, stops after fewer fringe crossing than the second counter, called the long counter. That is, the short counter measures the signal time period averaged over  $N_S$  signal periods, and the long counter measures the signal time period averaged over  $N_L$  signal periods. The significance of long and short is merely that  $N_L > N_S$ . The signal time period,  $\tau_L$ , measured over  $N_L$  signal periods and  $\tau_S$ , measured over  $N_S$  signal periods are given by

$$\tau_L = \frac{n_L}{N_L f_{ck}} \quad \tau_S = \frac{n_S}{N_S f_{ck}}$$

in which  $f_{ck}$  is the clock frequency (250 MHz),  $n_L$  is the number of clock pulses counted in time  $N_L \tau_L$ , and  $n_S$  is the number of clock pulses in time  $N_S \tau_S$ .

The two measurements of the signal time period,  $\tau_L$  and  $\tau_S$  should, of course, agree because the measurements are performed during overlapping times on the same signal

The "aperiodicity" is defined by

$$\epsilon = \frac{|\tau_L - \tau_S|}{\tau_L}$$

Hard wired logic performs the aperiodicity test for each measurement. The operator can select a maximum aperiodicity of 1/128, 1/64, 1/32, or 1/16. Alternatively, the clock counts  $n_L$  and  $n_S$  can be inputted to a computer which performs the aperiodicity test in software, in which case the maximum aperiodicity limit is continuously adjustable. Experience has shown that  $\tau_L$  and  $\tau_S$  will either agree closely or disagree grossly. As a result, mean velocity and turbulence intensity measurements are only very weakly influenced by the precise value of the aperiodicity limit. Because the hardware aperiodicity test is much faster than the software test, one normally uses the former.

Simultaneous signal detection in blue/green probe volume is required for turbulent data analysis. The signal time period measurement process is performed on each of the three velocity channels. Each burst counter outputs a pulse whose duration is  $N_L \tau_L$ , called the ACTIVE pulse. The ACTIVE pulses from the three burst counters are passed to the simultaneity checker. Also, the aperiodicity fail pulse, AFAIL, from each burst counter is sent to the aperiodicity checker. Only those data for which the three ACTIVE pulses were coincident for at least one instant in time, and for which an AFAIL pulse was not produced by any of the burst counters are passed to the computer which records the velocity data.

The LV optical system was configured as a Bragg-shifted, two-color, velocimeter. In essence, it is the orthogonal combination of two, two-component systems. Two PMT detectors were used and, hence, two UTSI LV signal receivers were required for frequency multiplexing two components of velocity from a single PMT signal.

The signal splitter divides the total signal amplitude into two equal parts, each of which is passed to a signal processing channel consisting of a double balanced mixer, PLL local oscillator, low pass filter and burst counter LV signal processor. The signal channel responsible for processing signals produced by the 15.0 MHz Bragg transducer is called the 15.0 MHz channel, and the other signal channel is called the 45.0 MHz

channel. The LO (local oscillator) port of each mixer is driven by a PLL whose frequency is adjustable. For each signal frequency which appears in the mixer's input (its radio frequency, or RF, port) the mixer's output (its intermediate frequency, or IF, port) contains the sum of this frequency and the local oscillator frequency. However, the mixer output is passed through a low pass filter which lets through only those difference frequencies which fall within the passband of the filter.

The signal frequency produced by a particle at rest,  $f_o$ , is the difference between the frequency of the local oscillator,  $f_{LO}$ , and the Bragg excitation frequency,  $f_B$ ,

$$f_o = f_{LO} - f_B$$

A component of velocity for a moving particle is found from the difference between  $f_o$  and the frequency of the output of the low pass filter,  $f$ . The latter is measured by a burst counter LV signal processor. (Actually, the burst processor measures  $\tau$ , the signal period averaged over some integer number of periods). Velocity was computed from the equation

$$v = \delta(f_o - f)$$

in which  $\delta$  is the fringe spacing (i.e., distance from one interference fringe to the next). The magnitude of a component of velocity was determined from the absolute value of  $f_o - f$ , and the sign of the component of velocity was determined from the sign of  $f_o - f$ .

The LV translation table was controlled by the same computer which controlled the burst counters. A disk file of  $xyz$  positions was created for each desired flow profile and the data acquisition was automatic. In order to minimize operator error, the acquisition was automated as much as possible.

### LV Calibration

Instrumentation and facility calibration was accomplished before the detailed flow-field measurements were obtained to assure benchmark quality data. The following paragraphs describe briefly the calibration standards and techniques for all instrumen-

tation. The calibrated instrumentation was first used to calibrate the facility (i.e. bulk velocity) and confirm core flow uniformity and boundary layer characteristics.

The precision Validyne pressure transducers were calibrated before and after each data run with a precision slant manometer with full scale range of 13 mm  $H_2O$  and an accuracy of 0.1 mm  $H_2O$ . These pressure transducers have a very linear response with demonstrated repeatability and accuracy of  $\pm 0.5$  percent of calibrated span.

Two techniques were used to calibrate the Laser velocimetry (LV) system for mean flow velocity. Then a single hot-wire system was used to check the mean turbulence intensity. A direct and absolute end to end calibration of the LV system was accomplished using a spinning wheel device. A small target wire attached to the spinning wheel was rotated through each set of orthogonal fringes at a known velocity. Errors in knowledge of wheel radius and rotational speed were determined to be  $< 0.5$  percent of the 20 m/s calibration speed or 0.1 m/s. Tunnel velocity was also determined by pitot-static pressure measurement which was then compared with LV measurement. Due to the small pressure differentials associated with 6 and 20 m/s flows, the pitot-static determined velocity was at best a  $\pm 1.0$  percent measurement. During the experimental program, differences between pitot-static velocity and LV velocity measurements, at duct centerline, greater than  $\pm 1.5$  percent were cause for recalibration.

Since the hot-wire anemometer is a well established measurement technique for turbulent flow properties measurement, a single hot-wire probe system was used to validate the LV measurements. Figures 5 and 6 show a comparison of mean velocity and turbulence intensity measurements taken by hot-wire and LV. In regions of the flowfield where high velocity gradients occur, the LV system will interpret the gradient produced velocity differences across the measurement volume as turbulence. This effect will result in erroneous measurements of pseudo-turbulence in thin laminar boundary layers. In the turbulent boundary layers and in the main duct flowfield, the LV measured turbulence intensity levels were 0.5 to 1.5 percent higher than the hot-wire levels. The significance of this difference will be discussed in section 4.

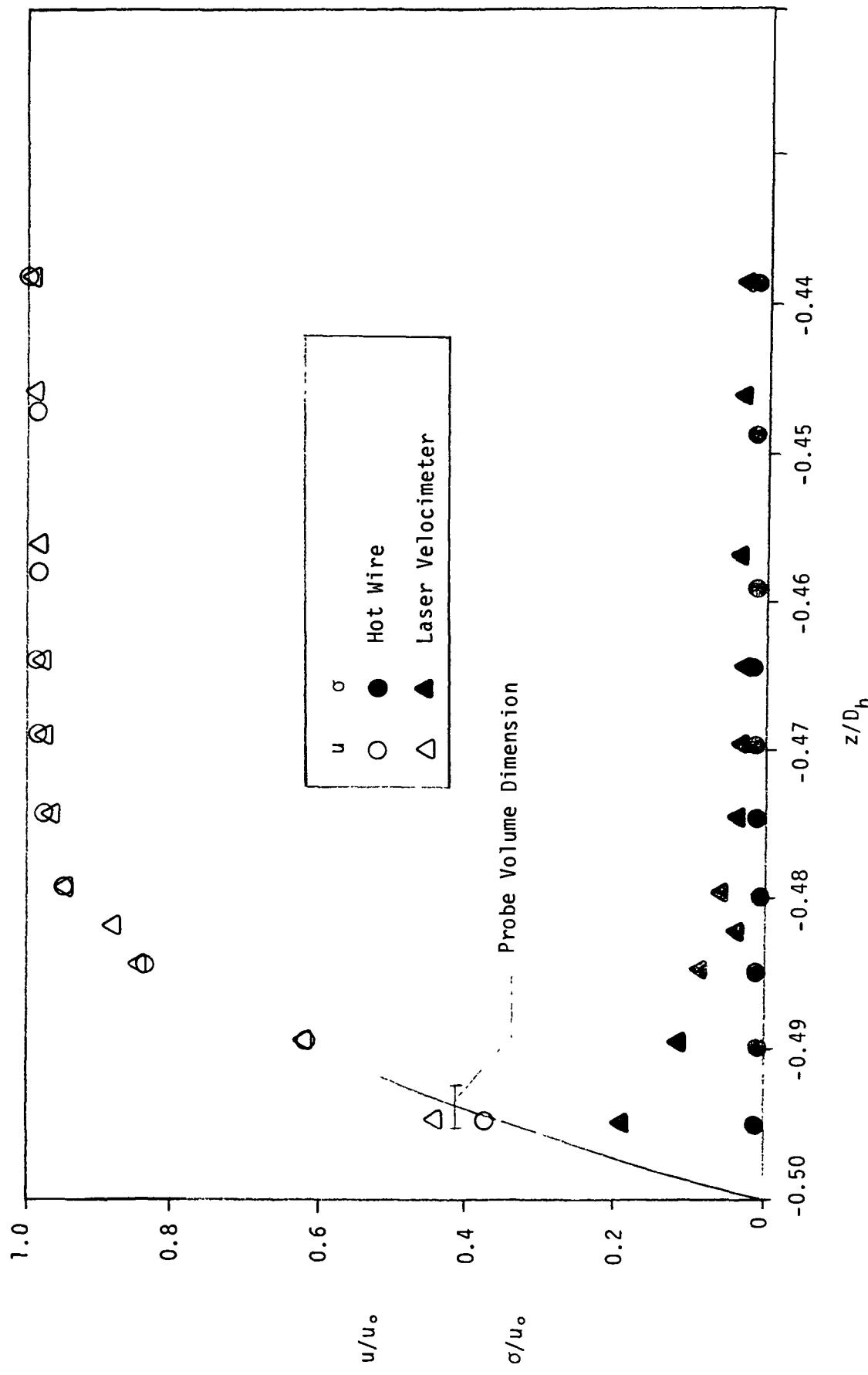


Figure 5. Hot Wire/Laser Velocimeter Comparison (Laminar)

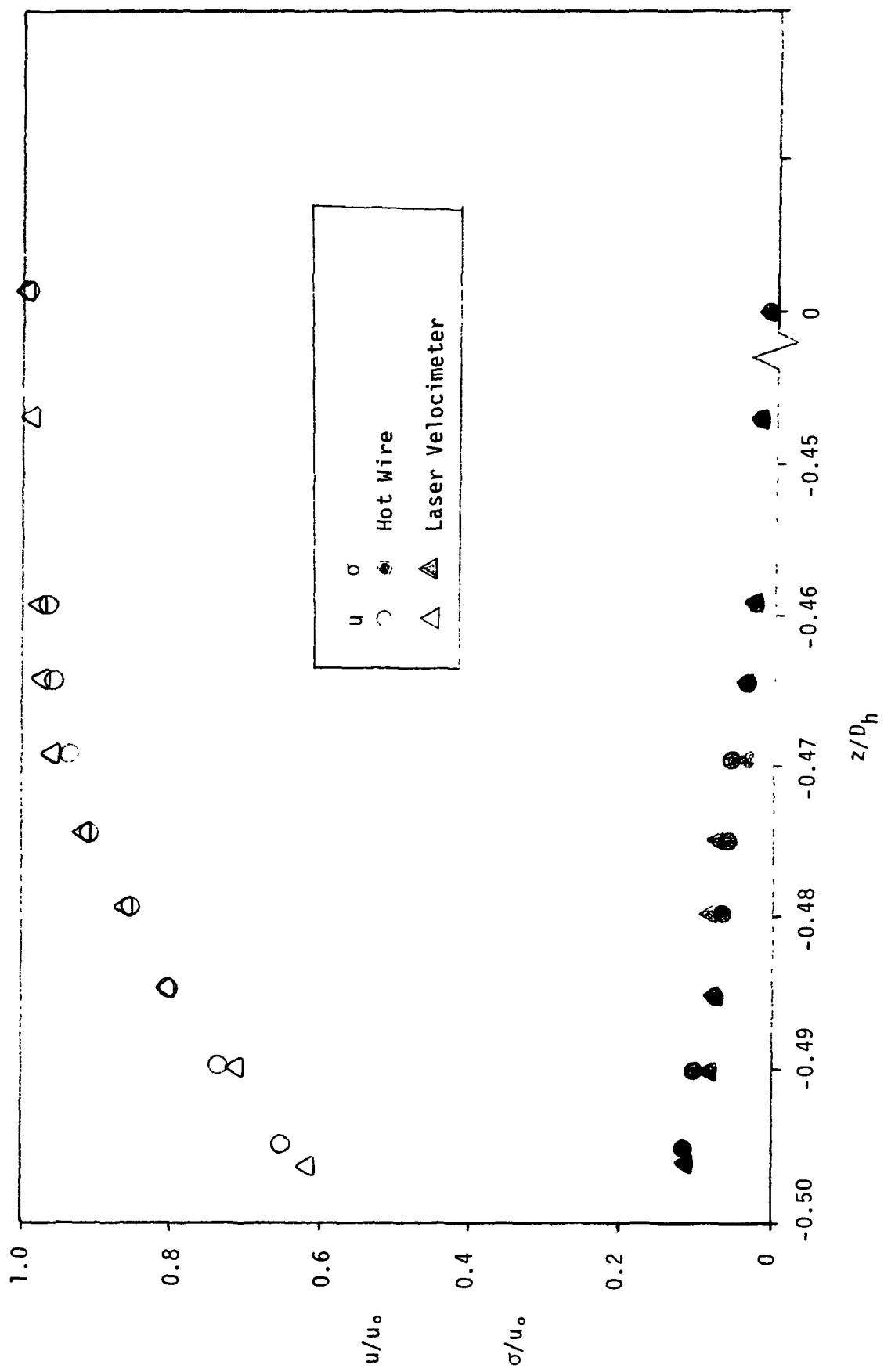


Figure 6. Hot Wire/Laser Velocimeter Comparison (Turbulent)

### LV Seeding

The development and operation of a satisfactory flow seeding system was a difficult task which required several iterations. The particles must be small enough to track the flow accurately, but large enough to scatter sufficient light for accurate signal processing. The duct flow rates for this investigation were about one cubic meter per second which required a large amount of seed for an eight hour run. Due to the health hazards associated with most suitable solid particles such as aluminum oxide and titanium dioxide, they were rejected.

Phenolic micro-balloons, which are used to reduce density in fiberglass, were found to be a good seed material. They have an equivalent particle size of 2 microns with good scattering properties. The micro-balloons were successfully seeded in both a water-alcohol slurry and in a fluidized bed air seeder. However the phenolic spheres were easily charged by static electricity and would collect on flow screens and duct walls. The operational problems of using the micro-balloons were greater than their advantages.

Water droplets were selected for the complete test program because of their good scattering characteristics, clean properties and low cost. Water droplet seed must be in the 2-5 micron size range to minimize particle lag problems. Water droplets as large as 10 microns followed the steady component of velocity with only a one percent error at mean velocities of 20 m/s due to the small velocity gradients in the curved duct. However accurate measurement of the low turbulence intensities associated with this project requires droplets of 2 microns or less. A water fog sprayer was used to generate particles in a large room from which the curved duct air was drawn. The larger particles were allowed to settle to the floor before reaching the inlet. Thus a nominal 2 micron water droplet entered the duct. This technique worked well in the moderate relative humidity range 60 to 80 percent. Under high relative humidity conditions the particles would grow and under low humidity conditions they would evaporate. Thus testing was restricted by weather conditions to moderate relative humidity days.

### **2.3 Duct Flowfield Measurements and Test Conditions**

Following checkout and calibration of the curved duct facility and instrumentation system, detailed flowfield surveys were taken with the three-component laser velocimeter at six duct stations (inlet, 0°, 30°, 60°, 90° and exit). The inlet and exit stations were located one duct width upstream and one duct width downstream of the 90° curved section. Six hundred spatial points were surveyed at each of the six measurement stations for two Reynolds numbers corresponding to duct bulk velocities of 6 and 20 m/s. The 6 m/s bulk flow case produced a laminar boundary layer at the entrance measurement station one duct width upstream of the 0° station. However, due to the physical size of the large turning duct, laminar flow could not be maintained through the 90° turn. A hot wire check of the exit station boundary layer confirmed a fully turbulent flow at bulk flow velocity of 6 m/s. Thus the "Low Reynolds Number" data has a laminar entrance boundary layer profile with transition to turbulent flow in the turn. The 20 m/s bulk flow case produce a fully turbulent entrance boundary layer which of course remains turbulent throughout the 90° turn. Thus the "high Reynolds number" data has fully turbulent boundary layers. At each measurement point approximately 300 data samples were taken by the LV system and processed to yield the mean velocity and its three orthogonal components along with average turbulence intensity and its three components. The turbulent cross-correlation terms are not presented in this report caused by the lack of statistical confidence due to the small sample size.

To provide additional information on the flowfield, static wall pressures were measured along the centerline of each duct wall. The wall pressure data shows the significant difference in inner and outer wall pressure gradients. In addition to the duct wall static pressures, the total pressure distribution was surveyed two duct widths upstream of the 0° station. The total pressure was uniform outside of the wall boundary layer which was approximately one cm thick. The LV survey two widths upstream of the 0° station also confirmed a flat core velocity profile with thin boundary layer.

For comparison, the experimental data obtained during this investigation was ob-

tained at much higher Reynolds numbers and Dean numbers than the data from NASA-CR-3367, reference 1. (See Table I.) The resulting thin boundary layers yield significantly different crossflow velocity fields which provide a much more difficult baseline case for the computational fluid dynamics codes.

Table I

UTSI Investigation

NASA-CR-3367

$$R_{ed} : 98,000 \rightarrow 328,000$$

$$R_{ed} : 790 \rightarrow 40,000$$

$$De : 45,800 \rightarrow 152,800$$

$$De : 368 \rightarrow 18,700$$

### 3. ANALYTIC TASK

To aid in defining the experimental program and analysis of results, and to define the capabilities of state-of-the-art computer codes, this investigation contained a theoretical fluid mechanics task. A computer code was selected which was capable of solving the Navier-Stokes (N-S) equations with turbulence models for three-dimensional internal flow. The selected computational fluid dynamics (CFD) code was adapted to the experimental geometry and flow conditions of the curved duct. Validation of the code was accomplished by comparison of results with published experimental results and by making self-consistency checks of the computer results. Following validation of the selected CFD code, grid sensitivity studies were conducted to select an adequate grid spacing for the laminar and turbulent boundary layer calculations. Finally computations for the experimental curved duct configuration were made for comparisons with experimental data.

#### 3.1 Selection of 3-D CFD Code

Several N-S codes were considered initially. Based on proven applicability to internal flows similar to those in this investigation, two were evaluated in detail. The Briley-McDonald "MINT" code and the P. D. Thomas internal-flow code were both considered acceptable with relative advantages and disadvantages. The Briley-McDonald code was judged more difficult to use and had much less available documentation. Also, the code was not available to us during the initial portion of the contract period. However, the "MINT" code had been run on curved-duct geometries similar to the configuration used in this investigation. The Thomas code, by contrast, has extensive documentation and had been applied to duct flows, although with different geometries from the present one. They differ mainly in the treatment of boundary conditions. Both codes are based on the Beam-Warming implicit, alternating-direction convergence scheme and are similar.

For these reasons the P. D. Thomas internal flow code was selected. It is fully elliptic with all inertial terms retained. Both cross stream viscous terms are retained, and only the streamwise viscous term is neglected. The Thomas code uses generalized

coordinates and was readily adapted to the curved duct geometry. Both code-validation and grid-sensitivity studies were conducted and are reported in the following sections.

### **3.2 Code Adaptation and Validation**

The P. D. Thomas internal flow code was obtained from the NASA Langley Research Center and modified for use on the UTSI VAX 11/780 computer as well as on the CRAY 1-S computer at NASA-Lewis Research Center. Two test cases were successfully run to demonstrate code baseline operation: laminar, flat-plate flow, and three-dimensional flow through a nozzle. Results were successfully obtained for nozzle throat Mach numbers of 1.0 and 0.5. The results were similar to those for test cases reported by Thomas (ref. 4).

To validate the capability of the P. D. Thomas code extensive comparisons were made with the numerical results published by Briley and McDonald in reference 3 and with the experimental data published by Whitelaw et. al. in reference 1 for flow in a square cross section turning duct. The comparisons were made for laminar flow to avoid the uncertainties involved in turbulence modeling. The validation involved an assessment of the adequacy of the N-S solutions with practical computational grids, and an evaluation of the discretization errors. The basic comparison case was run at Mach number 0.1 and Reynolds number of 790, based on duct width. Although 20 percent fewer mesh cells than Briely and McDonald reported were used for the comparison case, good agreement was found as shown in figures 7 and 8. Note that the comparison case selected has a large inlet boundary layer thickness of approximately 25 percent duct width. Both the P. D. Thomas and Briley-McDonald codes produced solutions that differed similarly from the experimental results. It can be seen that although the Briley-McDonald results used 69 percent more grid points in the crossflow direction, the results are very similar. The fact that the peak in the experimental velocity profiles is not adequately resolved implies that both solutions are affected by discretization error with the grid sizes used. Thus a study of the influence of grid resolution was conducted, along with, a study of time step size and of smoothing functions for improved accuracy.

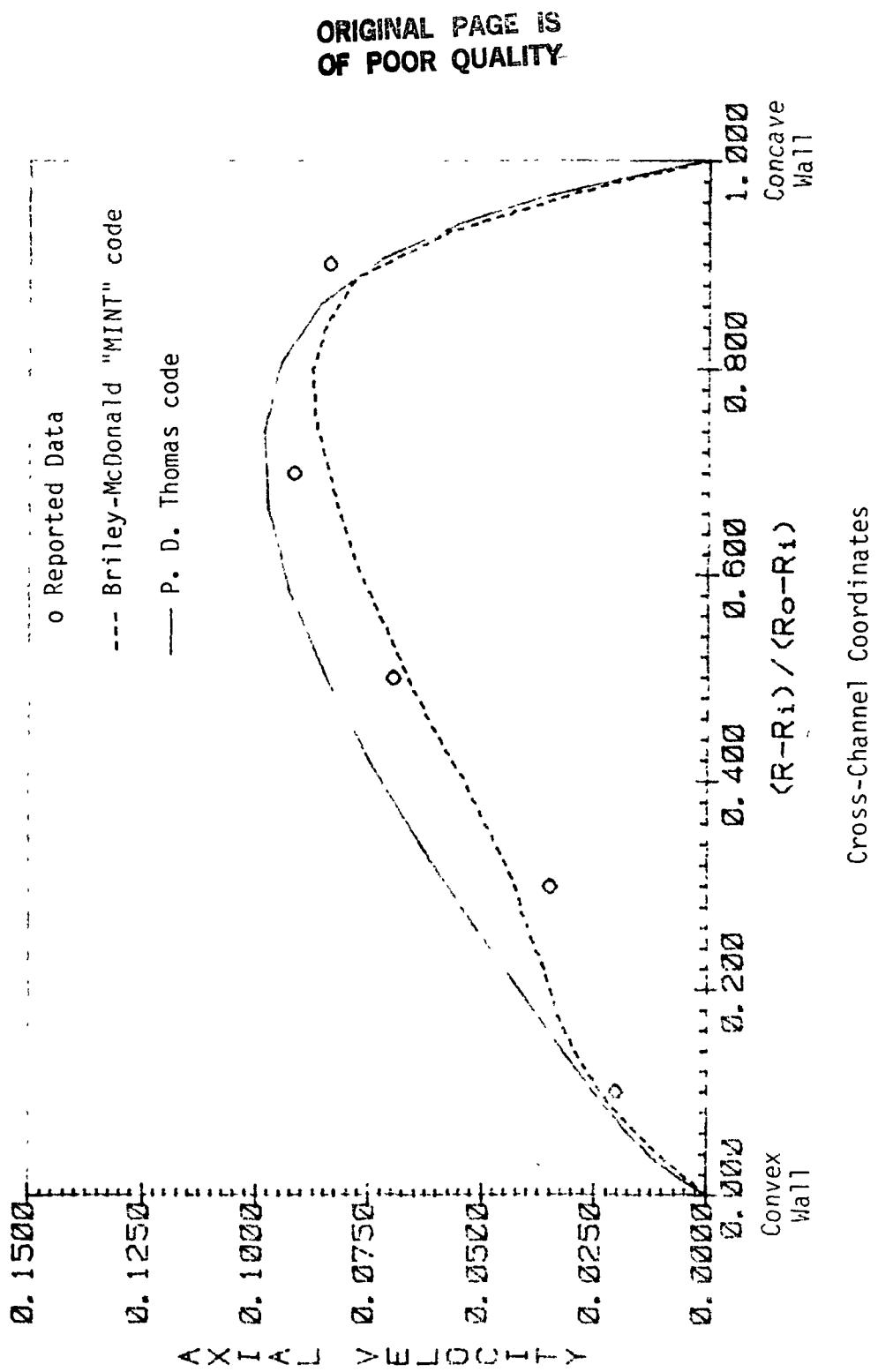


Figure 7. Axial Velocity Profile Comparison;  $Z = 0, \theta = 60^\circ$

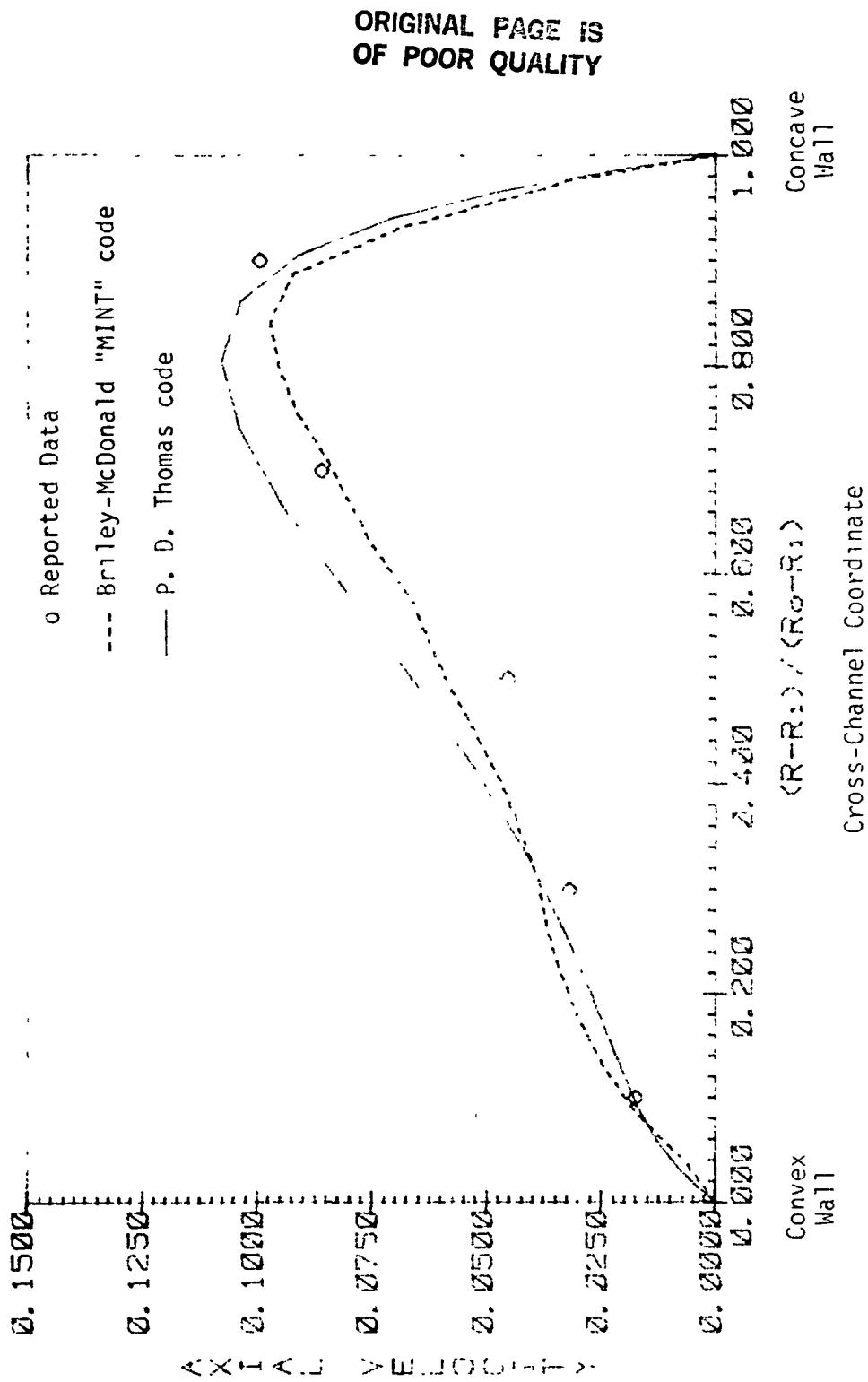


Figure 8. Axial Velocity Profile Comparison,  $Z = 0, \theta = 90^\circ$

and convergence.

### 3.3 Grid Refinement Studies

The grid selected for the validation case described above had  $26 \times 28$  points in the cross stream plane and 17 streamwise planes. To investigate the effects of numerical truncation error, runs with different size grids were made. The selected grids had  $21 \times 21$  and  $32 \times 32$  points in the crossflow plane and 17 and 33 down stream planes respectively. Figures 9 and 10 show only small differences in the results, which indicates a small truncation error. Also, the mesh was locally refined by a factor of three on the  $21 \times 21$  grid near the wall where a peak in the crossflow velocity occurs. No significant velocity profile changes resulted. For the entrance region profiles and Reynolds numbers evaluated, the resulting solutions were not sensitive to grid size or distribution. The discrepancy between the numerical and experimental results remains unresolved. The results do suggest that state-of-the-art N-S codes may have problems in resolving the detailed features of any complex flow.

### 3.4 Numerical Results for Laminar and Turbulent Boundary Layers

Following extensive code adaptation, validation and refinement, flowfield calculations were made for two Reynolds numbers corresponding to laminar and turbulent entrance boundary layers. Since the calculations were completed before the results of the experimental task were obtained, the cases were run at the same Reynolds numbers as reference 1. The laminar case was run at  $R_{ed} = 790$ , and the turbulent case was run at  $R_{ed} = 40,000$ . Both cases were run at Mach numbers of approximately 0.1. For the laminar case an inlet boundary layer thickness of 25 percent was selected, again to be compatible with reference 1. For the turbulent case, the algebraic eddy viscosity model contained in the Thomas code was used, and the sensitivity to initial boundary layer thickness was investigated. Comparative runs were made with 13 mm (0.5 in), 25 mm (1.0 in) and 51 mm (2 in) boundary-layer profiles and identical grid spacing. The 13 mm and 25 mm initial boundary layer solutions were very similar, but the 51 mm

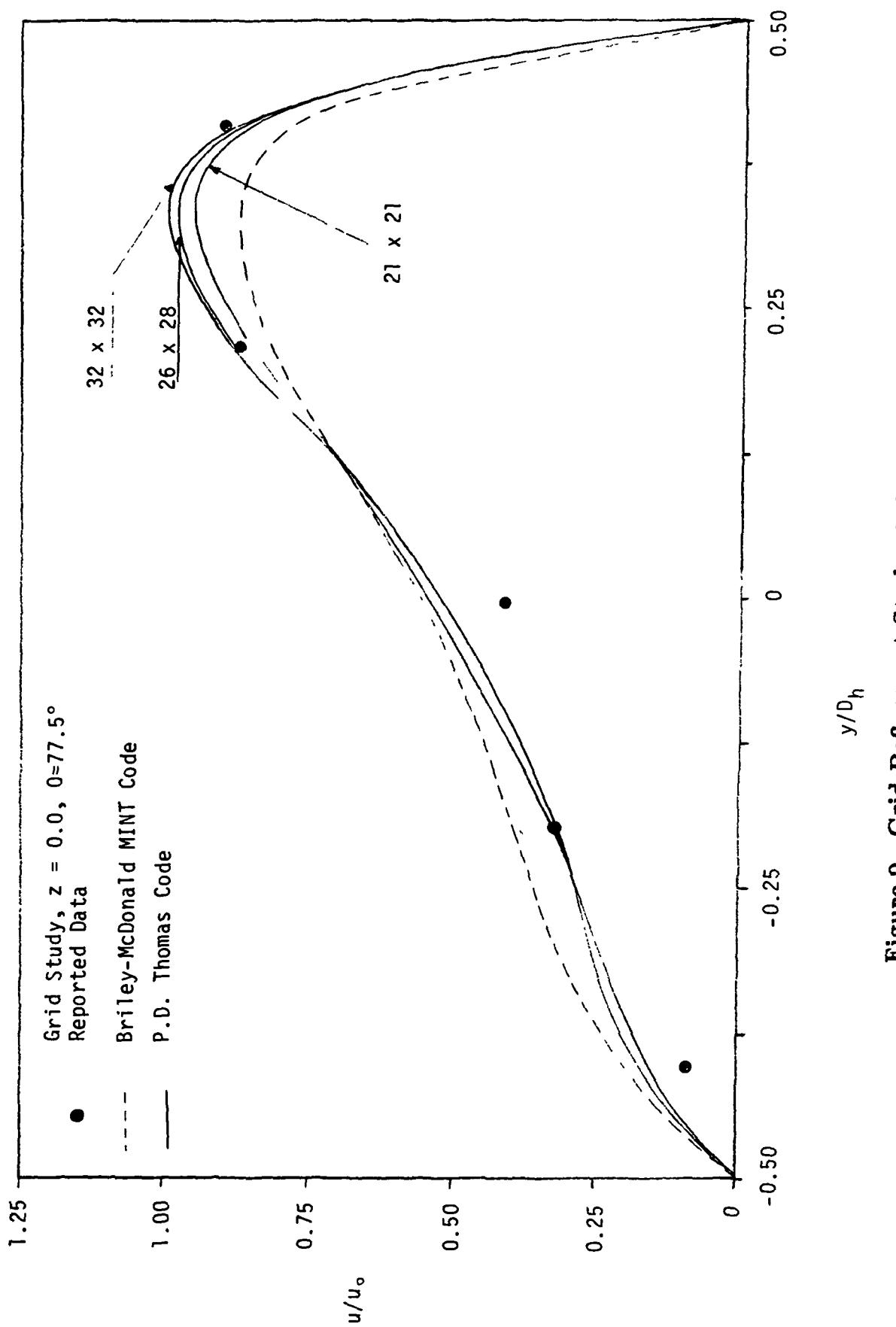


Figure 9. Grid Refinement Study, Axial Velocity

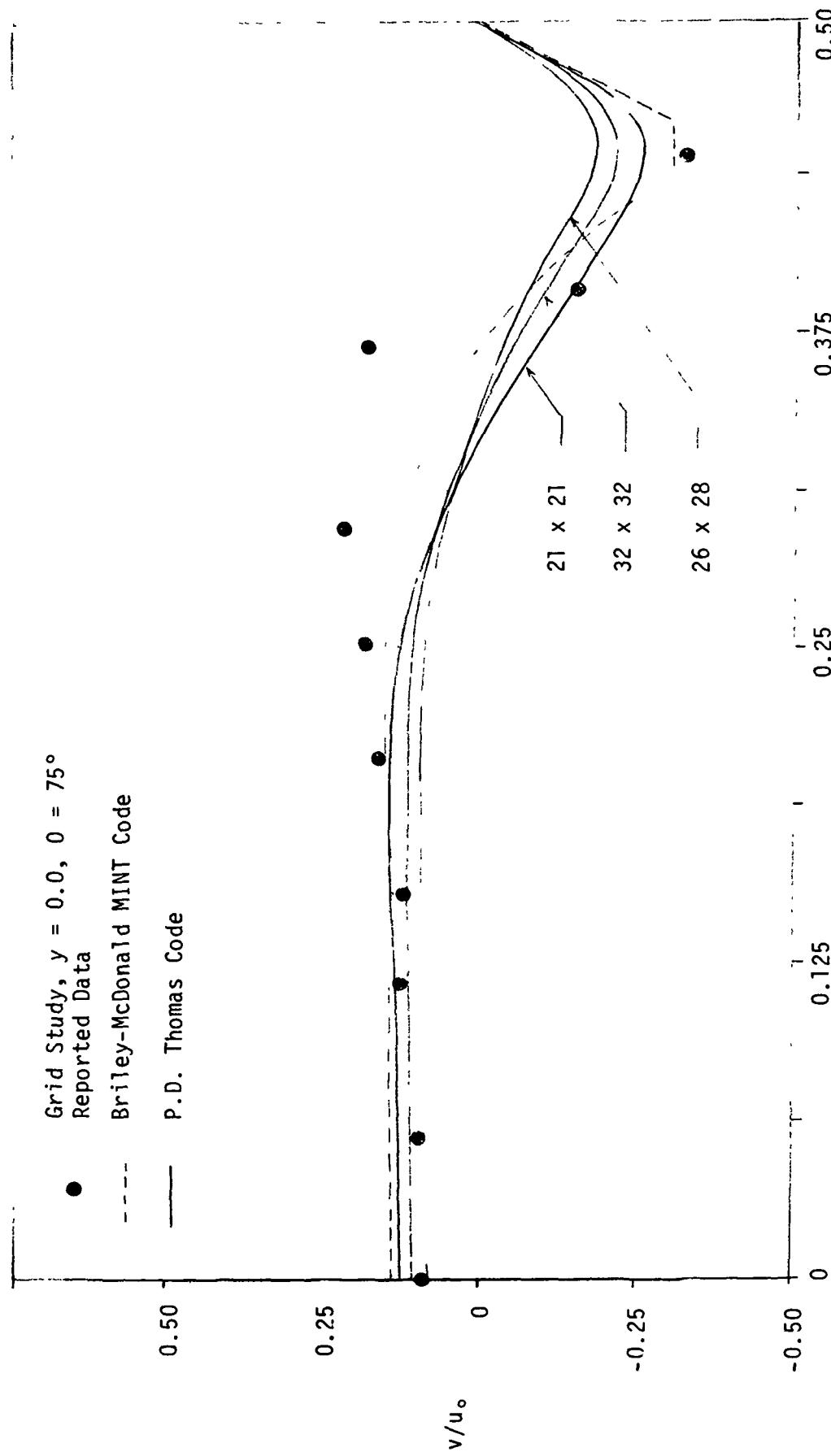


Figure 10. Grid Refinement Study, Radial Velocity

boundary layer solution was considerably different. These results may be explained, qualitatively, by considering vorticity effects in the flowfield. In all three cases, the vorticity entering the duct turn was about the same. In the first two cases, the initial vorticity was confined to a region near the duct wall, while in the third the initial vorticity was distributed over 40-percent of the duct half-height. The similarity of the two "thin" boundary layer solutions may indicate an axial numerical diffusion caused by insufficient grid resolution for the large gradients in the boundary layer, or may be a realistic physical result where the downstream flow depends on only the total inlet vorticity as long as it is confined to a thin region. Indeed, Thomas has even suggested that the number of grid points in the boundary-layer region be reduced to one. A check on mass conservation was made for both the laminar and turbulent flow calculations. axial mass flux was integrated over each cross section plane. the resulting mass flow variation was less than 0.5 percent.

Figures 11 and 12 present the calculated axial velocity profiles for the curved duct exit station ( $\theta = 90^\circ$ ) for the laminar and turbulent cases, respectively. Note that both sets of velocity profiles are very similar and do not show significant influence of Reynolds number or boundary-layer turbulence. Although figures 11 and 12 agree well with Whitelaw's results from reference 1 for thick boundary layer flow at low Reynolds number, the next section will show less satisfactory agreement with experimental data

Figures 13, 14, and 15 present the calculated crossflow results for axial stations  $\theta = 30^\circ$ ,  $\theta = 60^\circ$ ,  $\theta = 90^\circ$ . The resulting circulating flow pattern, which contains high crossflow velocities in the boundary layer, is dominated by the thickness of the inlet viscous layer. Lack of agreement with the experimental data presented in the next section can be attributed to insufficient grid resolution and unrealistically thick entrance boundary layers for the numerical solution initial conditions.

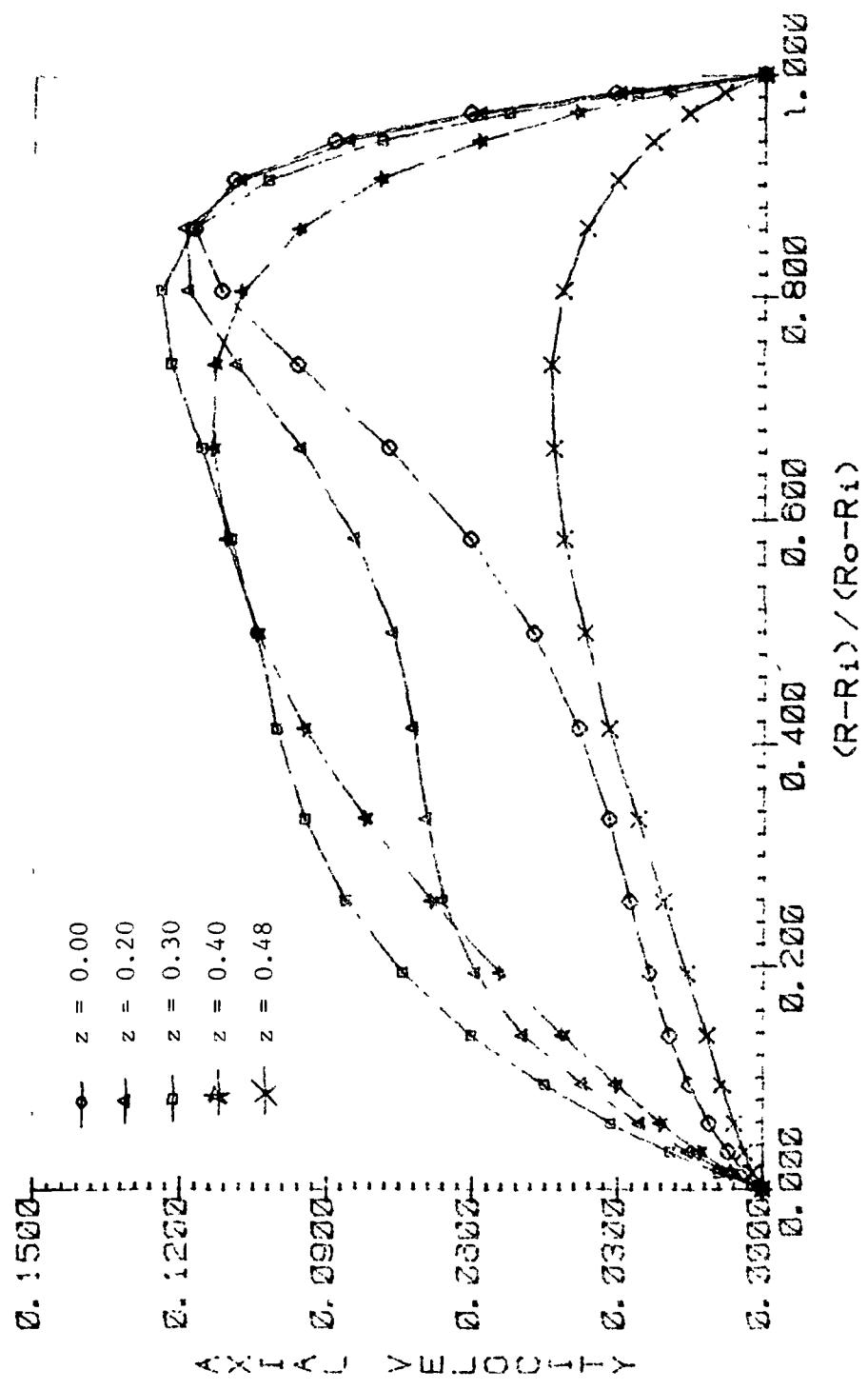


Figure 11. Axial Velocity Profile, Laminar,  $\theta = 90^\circ$

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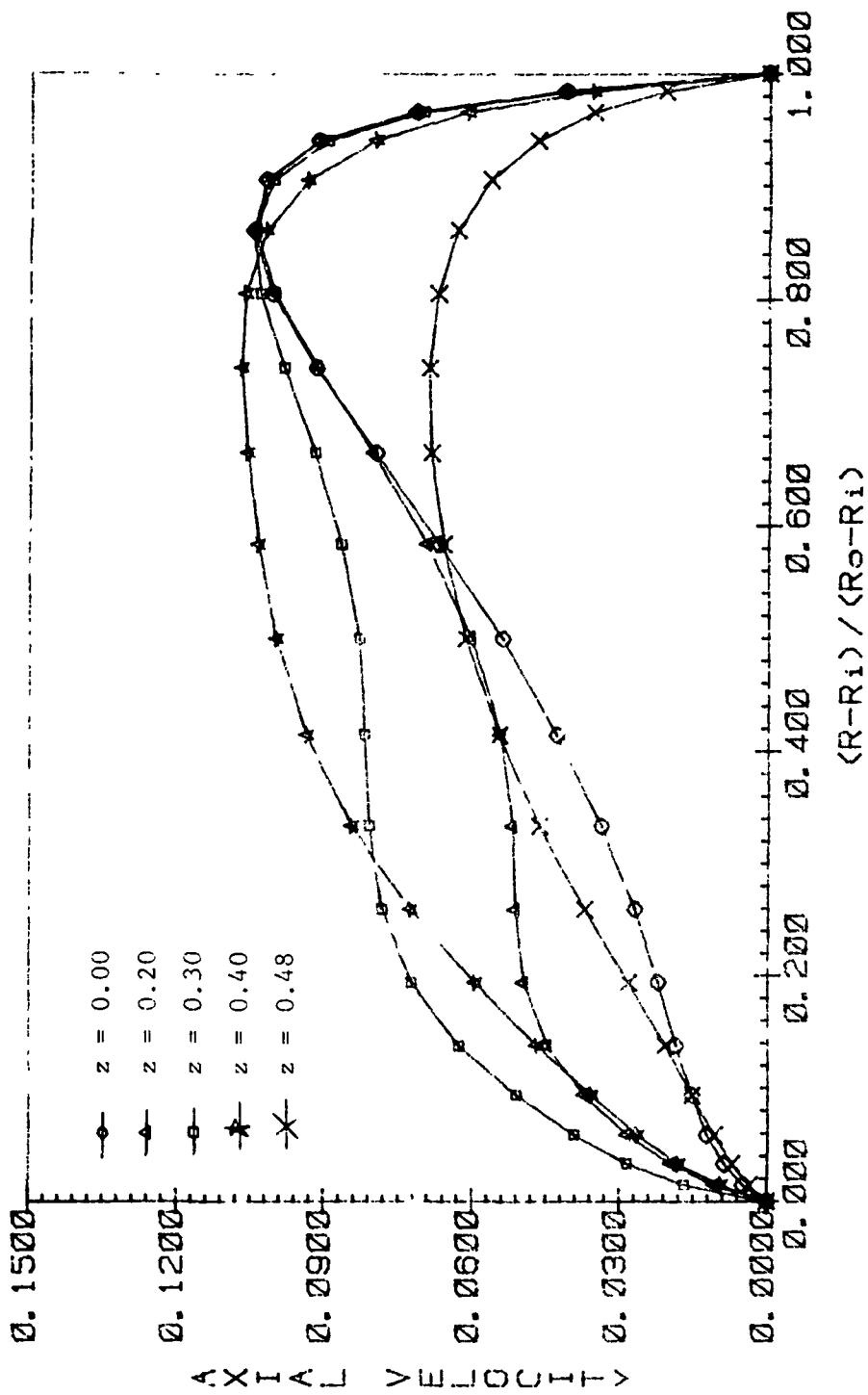


Figure 12. Axial Velocity Profile, Turbulent,  $\theta = 90^\circ$

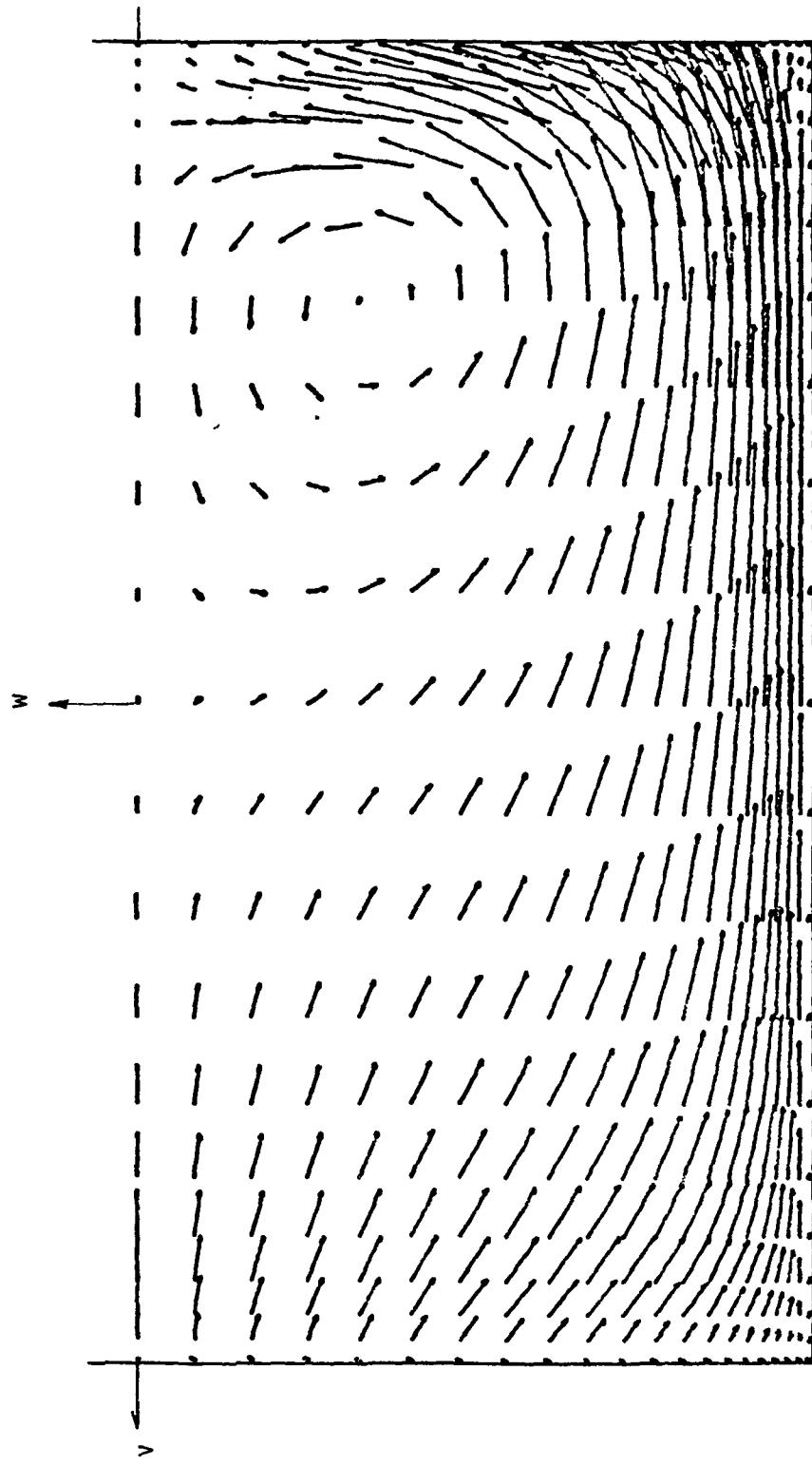


Figure 13. Crossflow Velocity Field,  $\theta = 30^\circ$

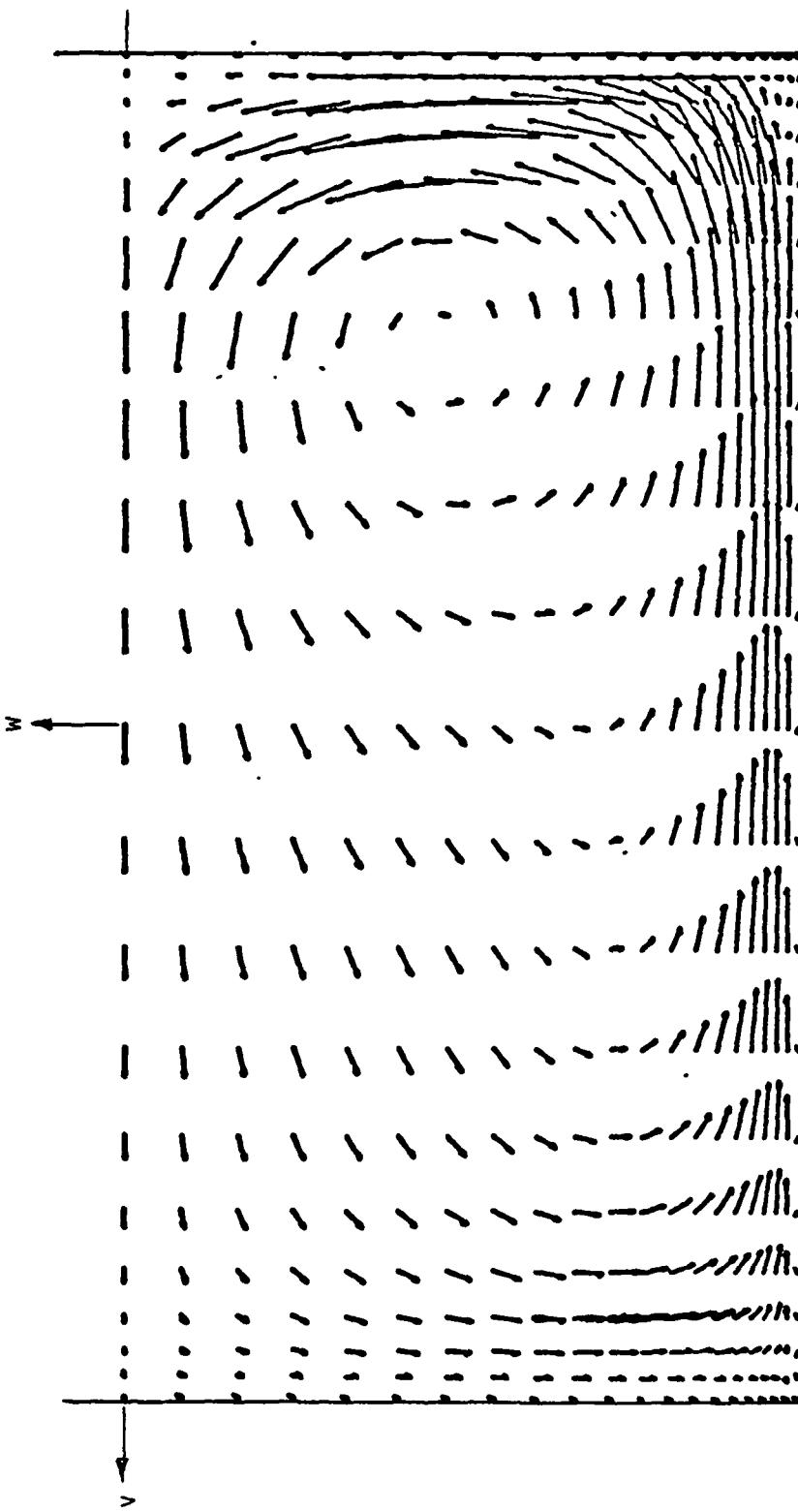


Figure 14. Crossflow Velocity Field,  $\theta = 60^\circ$

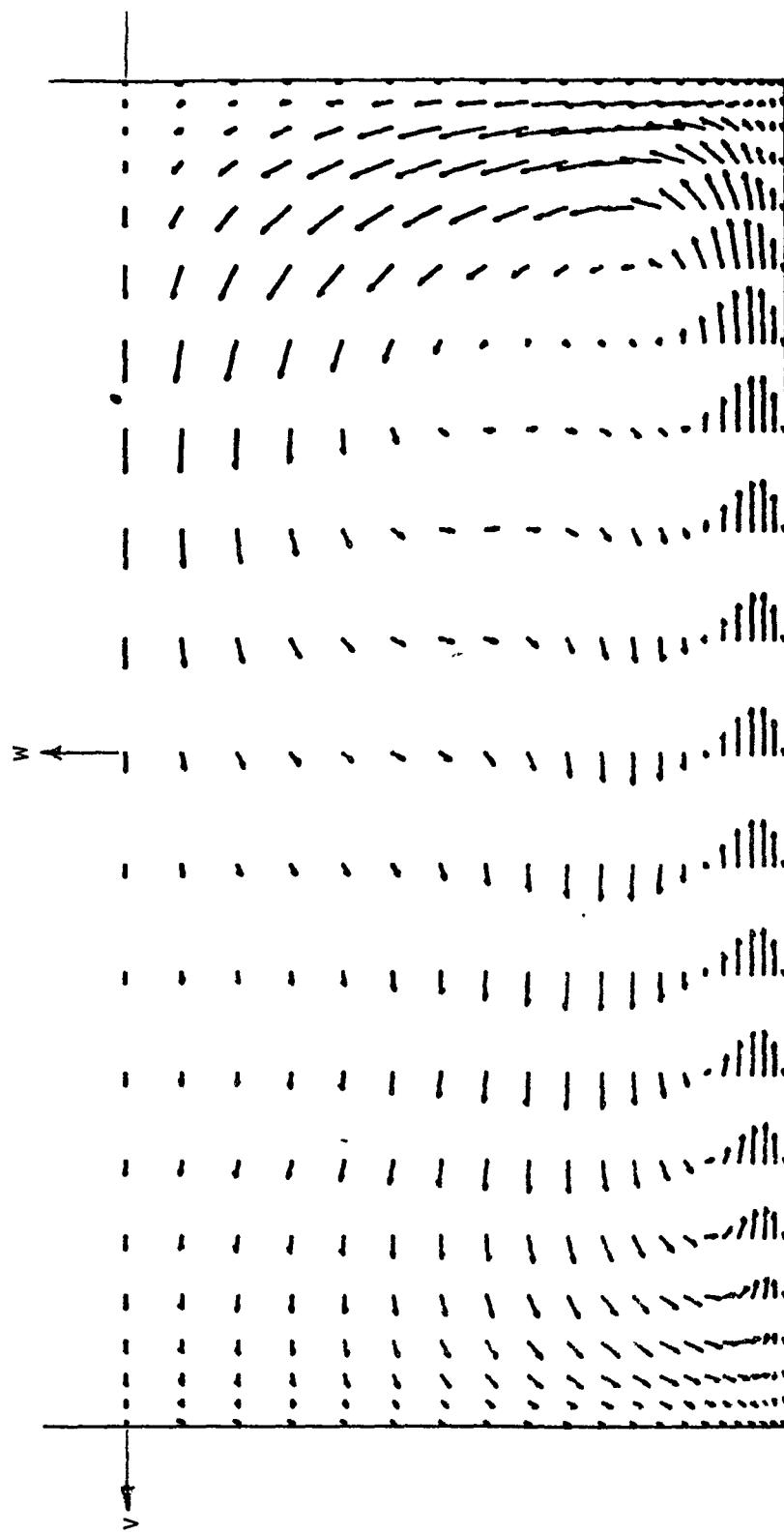


Figure 15. Crossflow Velocity Field,  $\theta = 90^\circ$

#### **4. PRESENTATION OF RESULTS**

The experimental data was acquired at two flow conditions, one at a low Reynolds number (98,000) corresponding to a duct bulk flow velocity of 6 m/s, and one at a high Reynolds number (328,000) corresponding to a duct bulk flow velocity of 20 m/s. The low Reynolds number flow provided a thin laminar boundary layer at the entrance to the curved duct ( $\theta = 0^\circ$ ). However, the Reynolds number was too high to maintain a laminar boundary layer throughout the  $90^\circ$  turn. This transitional flow was unavoidable because of the large physical dimensions of the curved duct and minimum stable operating velocity of 4 m/s. The high-Reynolds-number flow provided a thin turbulent boundary layer at the entrance of the curved duct.

To assure that there were no extensive separated-flow regions in the curved duct, detailed wall static pressure surveys were conducted at conditions corresponding to the selected test cases. Inlet and exit total pressure surveys were also taken to evaluate duct flow quality. Typical experimental data plots are presented in the following section, and detailed data plots are presented in Appendix A and Appendix B. A complete set of data from the experiments is contained on magnetic tape at the NASA-Lewis Research Center and is listed in Appendix C and Appendix D.

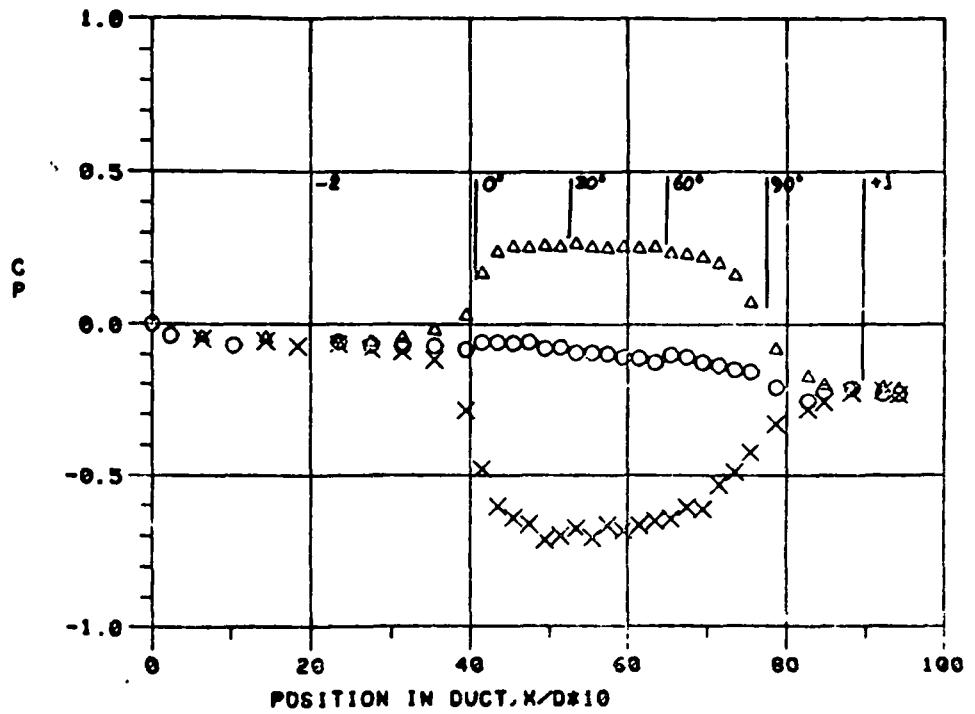
##### **4.1 Summary of Experimental Results**

Wall Static Pressure Distribution The wall static pressure distributions from the centerline of the suction wall, pressure wall and top wall were reduced to pressure coefficient form ( $C_p$ ). Figure 16 presents the static pressure coefficients for the low and high Reynolds number cases. The smoothness of the  $C_p$  profiles indicates the quality of the duct construction and sensitivity of the precision pressure transducers. Many wall static pressure surveys were taken before and during the laser velocimeter data acquisition and all results were consistent. One of the dominant duct flow characteristics is clearly shown in the pressure coefficient plots. The large axial pressure gradients on both the suction and pressure walls induce the large crossflows in the low energy

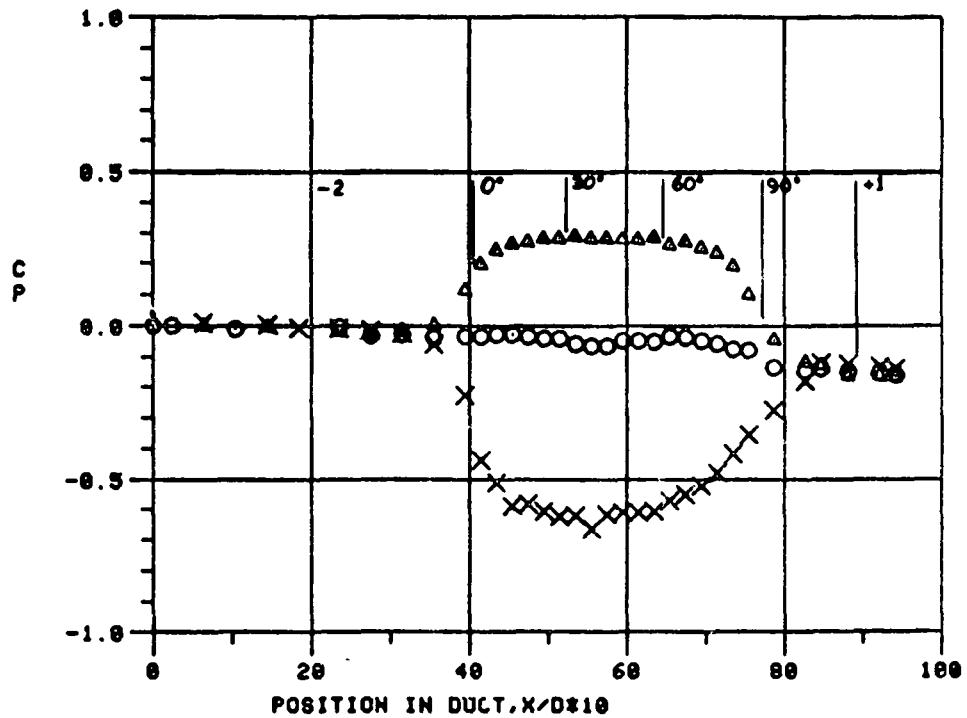
boundary layer. Note that, in non-dimensional  $C_p$  form, the pressure gradients are nearly identical for the low and high Reynolds number cases. The only difference in pressure distribution between the two cases presented in Figure 16 is the larger  $C_p$  drop along the duct for the low Reynolds number case. This difference is perhaps a result of a thicker boundary layer for the low Reynolds number flow.

Axial Velocity Profiles The primary component of velocity in the curved duct flowfield is the axial or  $x$ -component. It is the boundary layer generated by the axial velocity that is driven by the curved-duct pressure gradient to form the complex crossflows in the  $y$  and  $z$  directions. Thus, it is important to first consider the development of the axial velocity in the curved duct. The mean velocities presented in this section have been non-dimensionalized by the inlet bulk velocity (6 m/s or 20 m/s). To correct all data points to the same bulk velocity, the velocity at the tunnel inlet centerline ( $y = 0, z = 0$ ) was utilized as a reference. Data were obtained by computer-controlled scan files containing twenty to thirty spatial data points. A zero-zero reference data point was taken at the beginning and end of each scan file to check for tunnel stability. The velocity components in each scan file were then non-dimensionalized by the average axial velocity of the two zero-zero data points. An average of all the center-line axial velocities from all scan files for one measurement station was then non-dimensionalized by bulk velocity, and this non-dimensional centerline velocity was used to correct each non-dimensional velocity to the bulk velocity reference. This somewhat complicated procedure corrected the entire data set, for one measurement station, for small changes in tunnel operating conditions. For those applications where actual velocity is required simply multiply the low-Reynolds-number mean velocities ( $U, V, W$ ) by 6 m/s and the high-Reynolds-number mean velocities by 20 m/s.

Figure 17 and 18 present a comparison of low and high Reynolds number axial velocity profiles at the  $Z = 0$  plane for all six measurement stations. Note that at two duct widths upstream of the  $\theta = 0$  entrance to the  $90^\circ$  bend the velocity profile is uniform with a boundary layer thickness of 5 to 10 percent of the duct half-width. The



a. Low Reynolds Number Flow



b. High Reynolds Number Flow

**Figure 16. Wall Static Pressure Distribution**

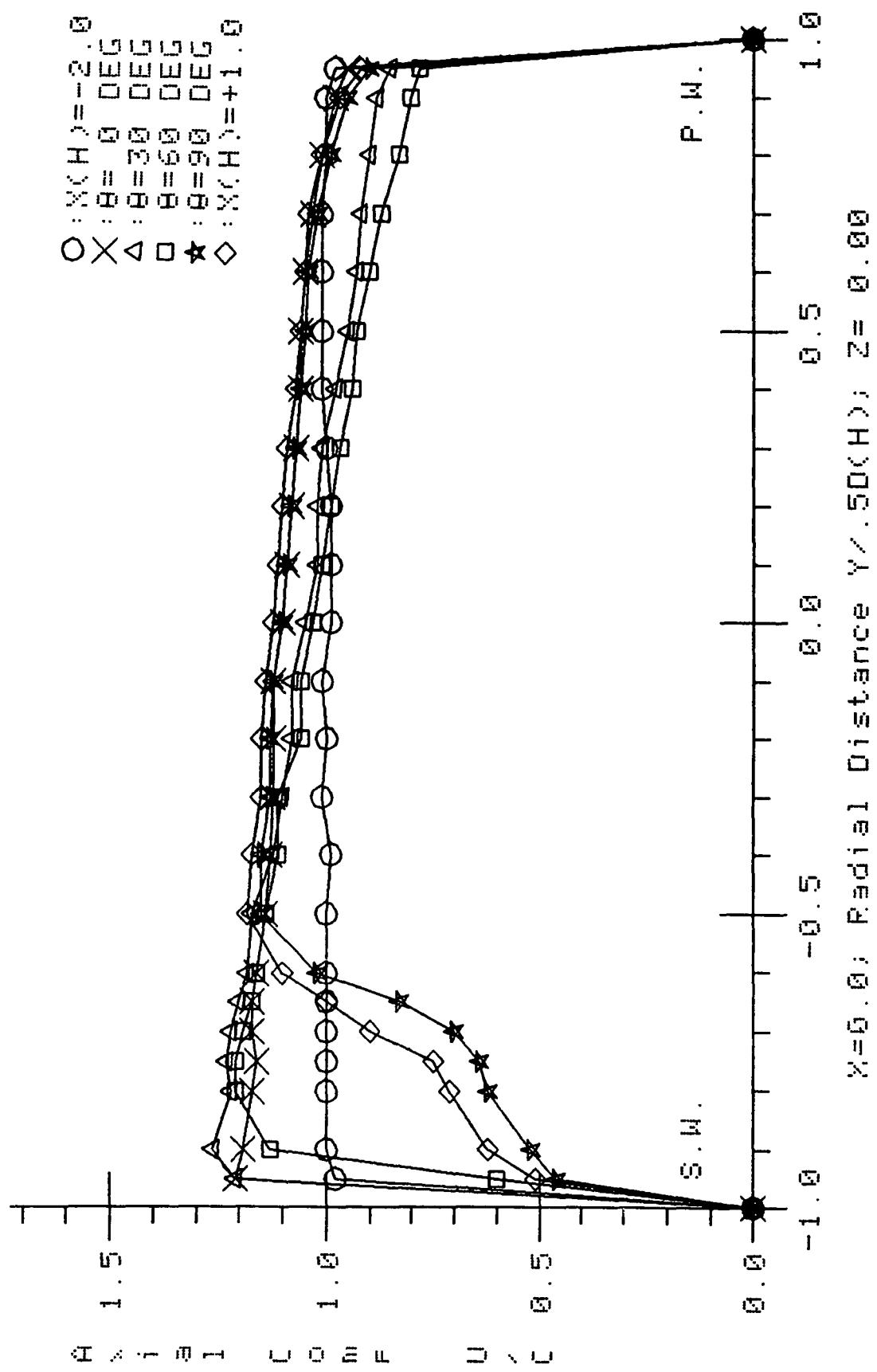


Figure 17. Experimental Axial Velocity, Low  $R_{ed}$ ,  $Z = 0.10$

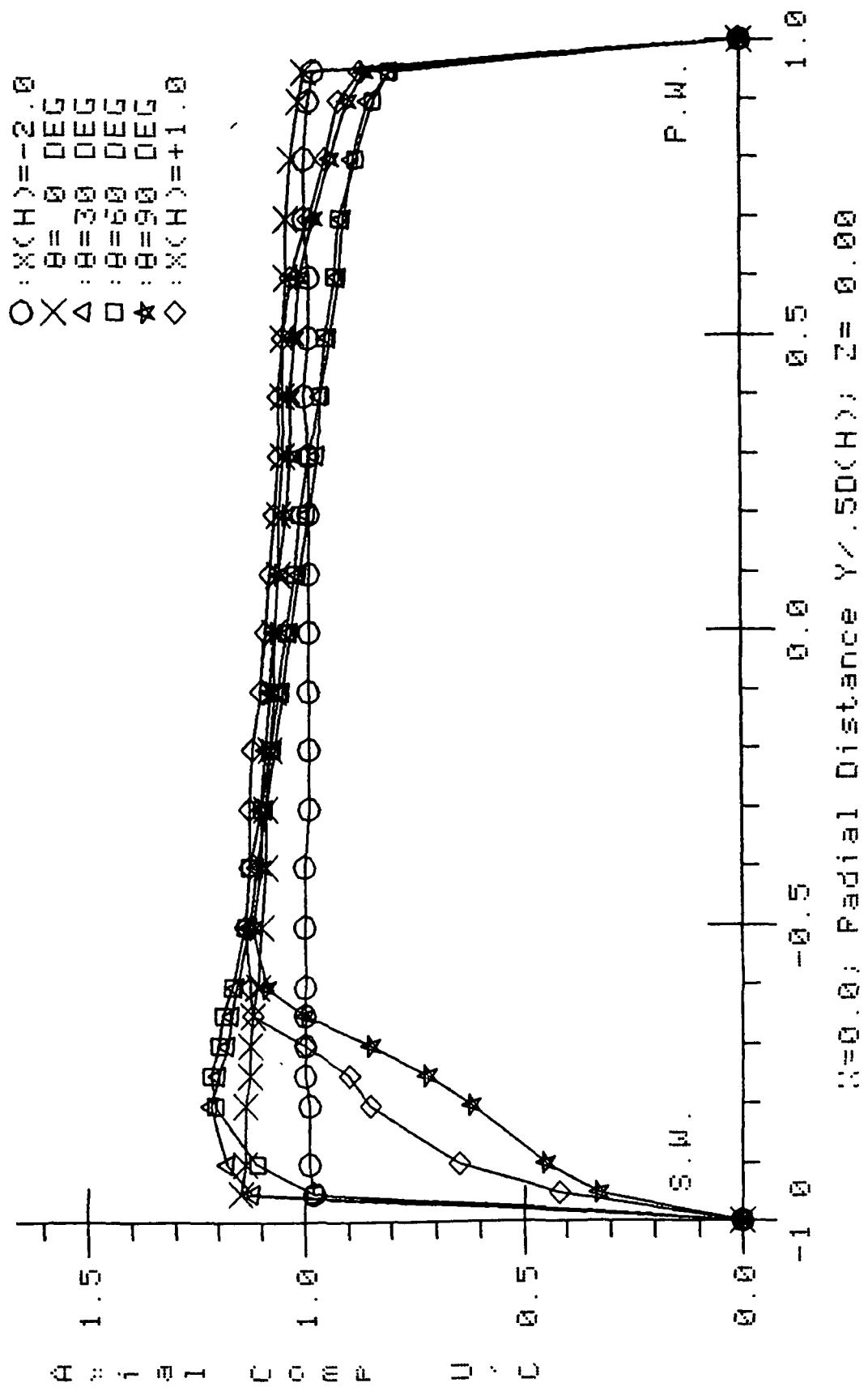


Figure 18. Experimental Axial Velocity High  $R_{ed}$ ,  $Z = 0.0$

velocity gradient between the suction wall to the pressure wall is well established at the  $\theta = 30^\circ$  station, and remains nearly constant until suction-wall pressure gradients retard the flow between  $\theta = 60^\circ$  and  $\theta = 90^\circ$ .

To illustrate the variation of axial velocity in the  $z$ -direction, Figure 19 compares the low and high-Reynolds number axial velocities for the  $\theta = 30^\circ$  station. Six  $z$ -planes are shown from the duct center plane down to 4 mm from the bottom wall. Only the bottom scan shows any influence of the  $z$ -direction velocity gradient. This data has not been non-dimensionalized thus there is some scatter in the core velocity profiles. There is, of course, a much greater  $z$ -variation in the axial velocity at stations  $\theta = 60^\circ$  and  $\theta = 90^\circ$ . See Appendix A and Appendix B for additional axial velocity profiles.

Crossflow Velocity Field The crossflow movement of the pressure gradient driven boundary layer has a very important influence on convective heat transfer. Thus the development of the crossflow velocity field in the curved duct was a major area of interest in this investigation. The crossflow vector plot provides the best presentation and easiest understanding of this flowfield. Figures 20 and 21 show the development of the low-Reynolds-number crossflow for the  $0^\circ$ ,  $30^\circ$ ,  $60^\circ$ , and  $90^\circ$  measurement planes. At the  $\theta = 0$  entrance to the  $90^\circ$  turn, the suction-wall and pressure-wall gradients have already influenced the crossflow, which results in a general flow toward the suction wall. The streamline curvature and radial acceleration effects have already reversed the general crossflow direction at  $\theta = 30^\circ$  except for the top and bottom wall boundary layers, which continue to accelerate toward the suction wall. At the  $\theta = 60^\circ$  plane the classic, curved-duct crossflow has been established. The magnitude of the crossflow velocities outside of the boundary layer are generally less than 5 percent of the axial velocity. However, in the developing boundary layer along the top, bottom and suction-walls crossflow, velocities of 20 percent magnitude are found. The crossflow velocities reach a maximum value at the  $\theta = 90^\circ$  plane. The developing boundary layer has been moved by the strong crossflow and collects near the center of the suction wall in a region of high turbulence and low axial velocity. Downstream of the  $90^\circ$  plane, the

MEAN FLOW VELOCITY PROFILES  
LOW REYNOLDS NUMBER CASE - STATION 6 ( $\theta = 30^\circ$  DEG)

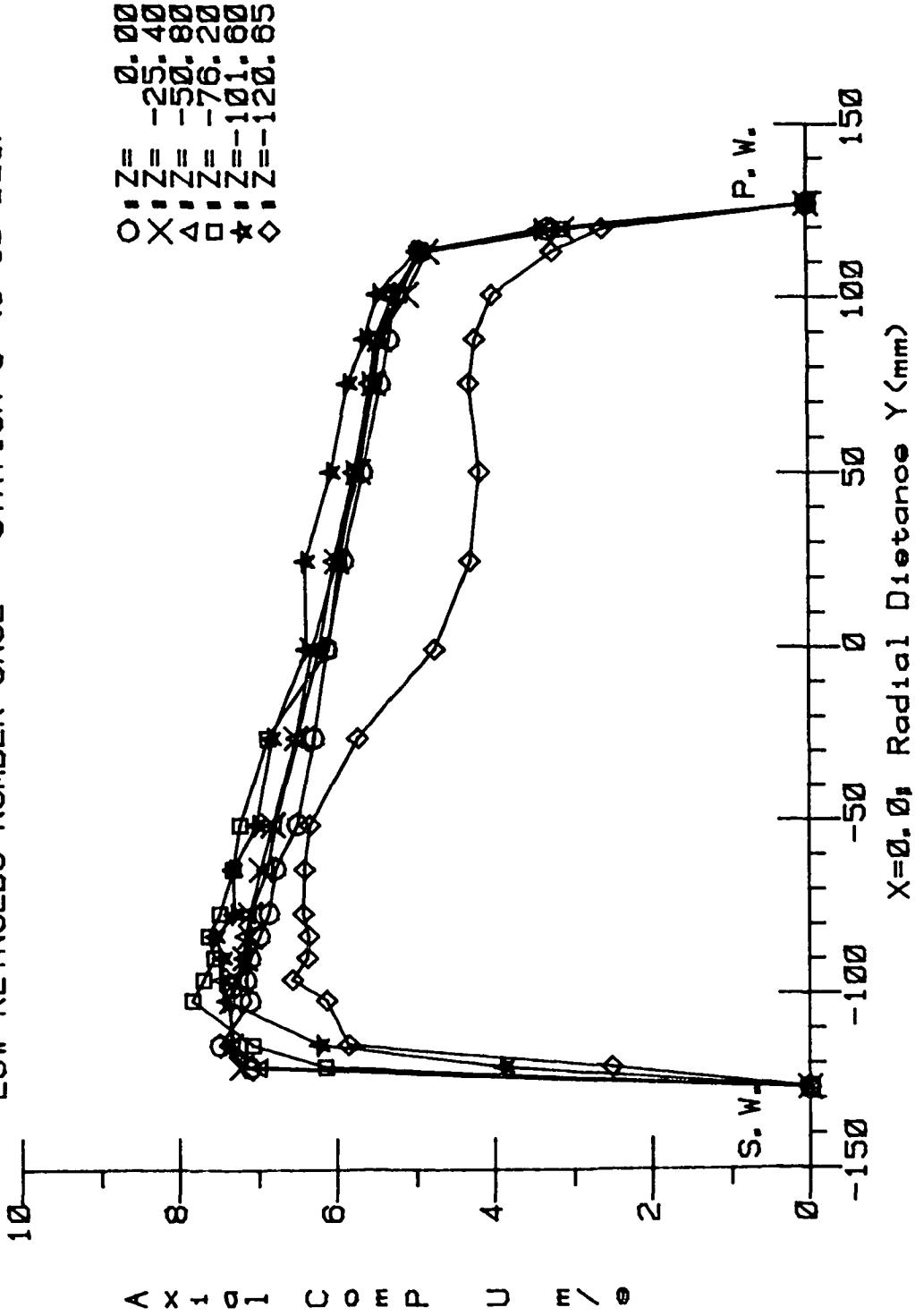
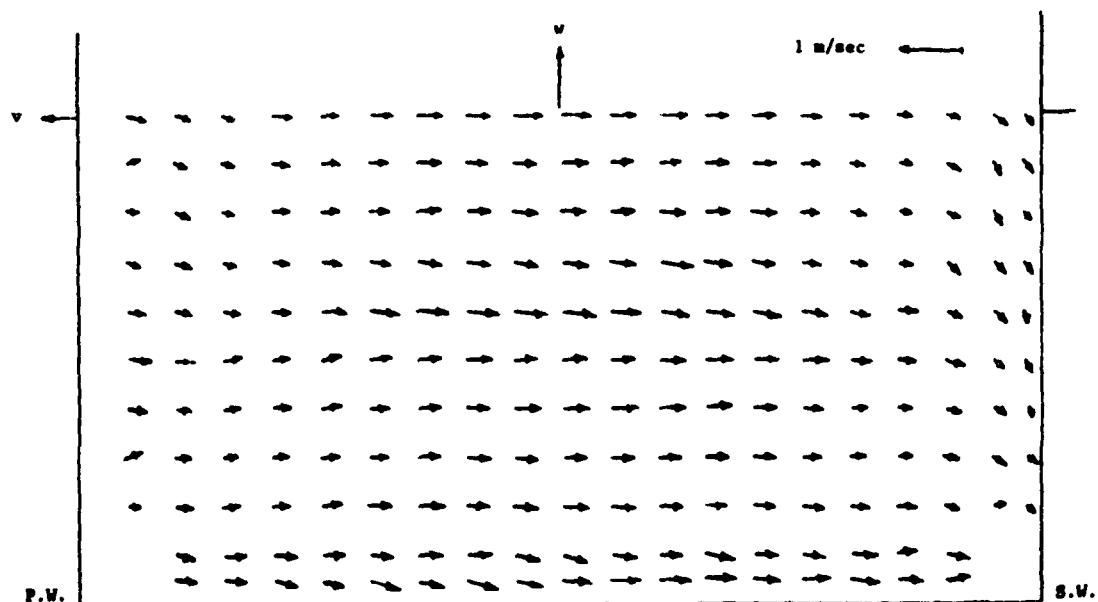


Figure 19. Experimental Axial Velocity Profiles,  $\theta = 30^\circ$

STATION 4,  $0^\circ$  CROSSFLOW

$U_b = 6 \text{ M/SEC}$



STATION 6,  $30^\circ$  CROSSFLOW

$U_b = 6 \text{ M/SEC}$

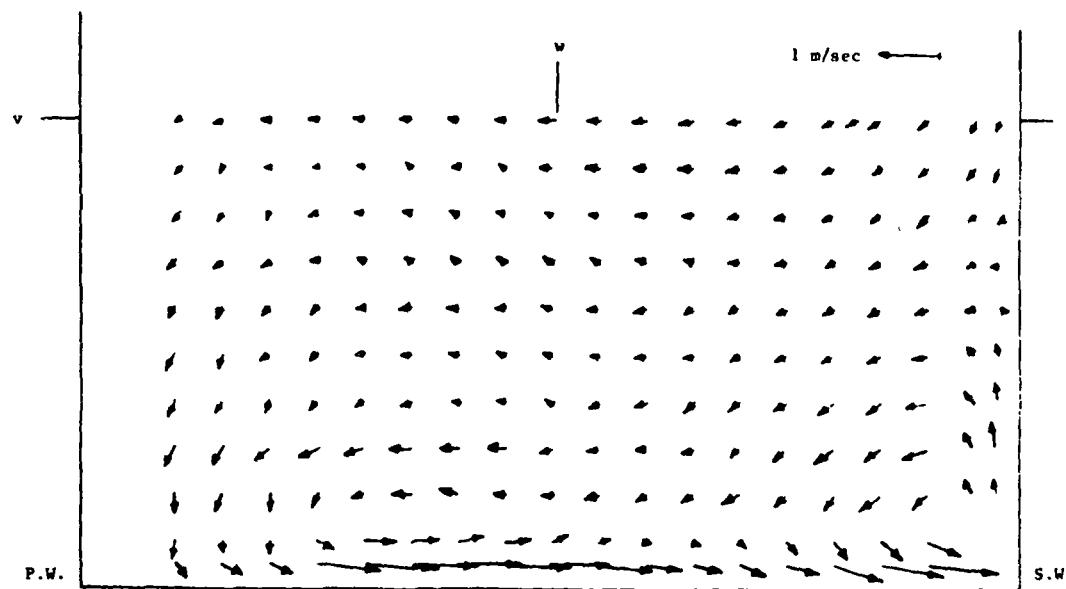
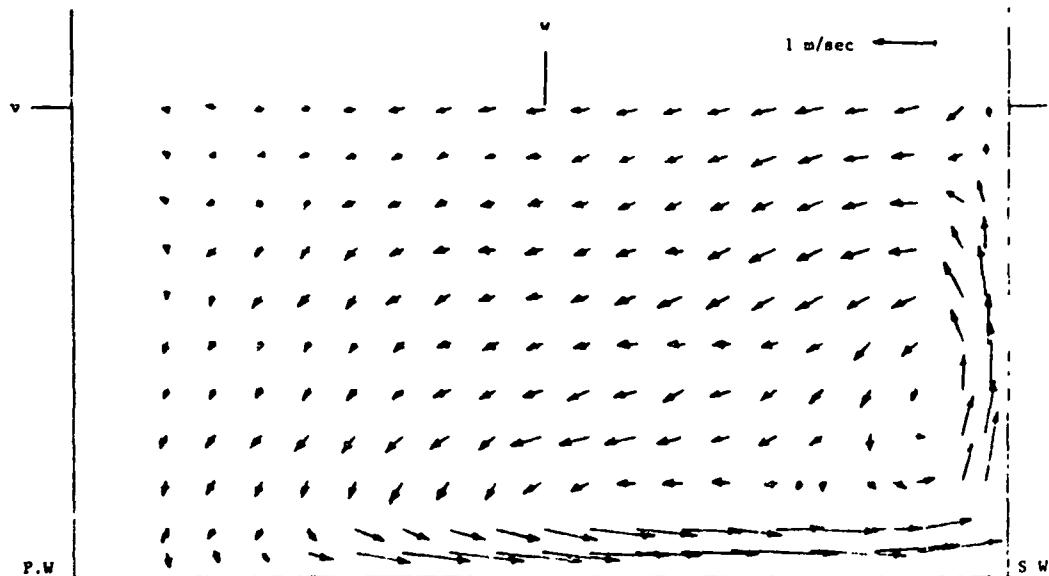


Figure 20. Experimental Crossflow Velocity,  $\theta = 0^\circ, \theta = 30^\circ$

STATION 8,  $60^\circ$  CROSSFLOW

$U_b = 6 \text{ M/SEC}$



STATION 10,  $90^\circ$  CROSSFLOW

$U_b = 6 \text{ M/SEC}$

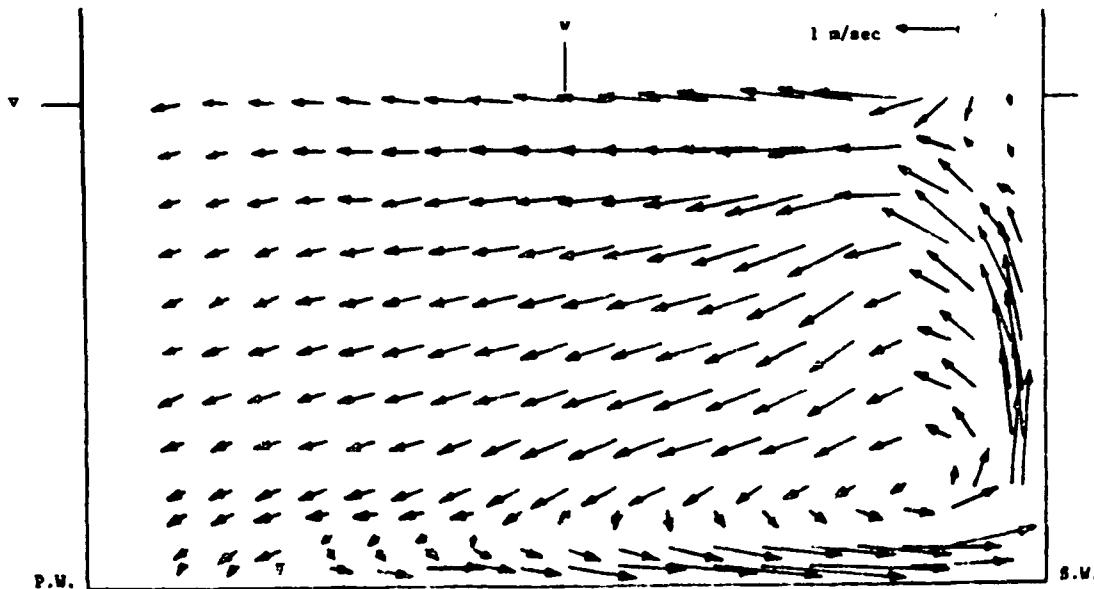


Figure 21. Experimental Crossflow Velocity,  $\theta = 60^\circ, \theta = 90^\circ$

strong crossflow toward the pressure wall decays rapidly but the circulation pattern near the suction wall persists.

The non-dimensional crossflow field for the high-Reynolds-number case is nearly identical to the low-Reynolds-number flow described above.

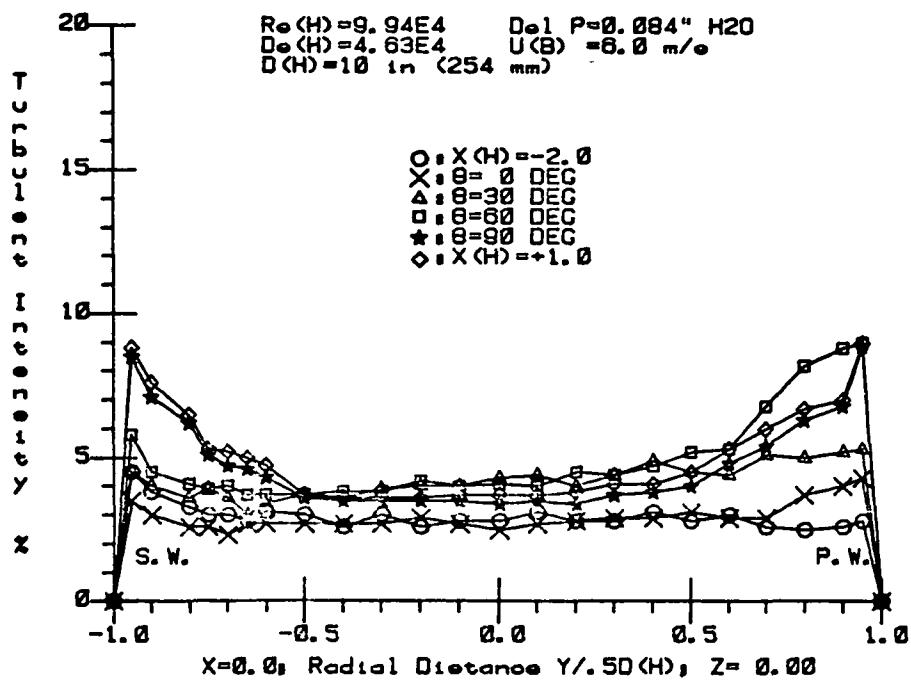
Turbulence Intensity Distribution The mean turbulence intensity measurements presented in this section were made with the 3-D laser velocimetry system. Average sample size per data point was 300 which is considered small for turbulence measurements. (This sample-size limit was imposed by the available microcomputer system.) A single-wire, hot-wire anemometer was used to check the LV turbulence intensity. In general the LV measurements of intensity were 1 percent higher than the hot-wire measurements. Thus the turbulence intensity values presented in this report should be considered high by 1 percent with an accuracy of  $\pm 1$  percent.

Figure 22 compares the low-Reynolds-number duct centerline turbulence intensity with the high-Reynolds-number values. The turbulence distribution is nearly identical for the two flow conditions. The core-flow turbulence intensity downstream of the inlet screens was measured at 2-4 percent which is a reasonable level. The boundary layer intensity levels were measured at 6-10 percent which is also typical for thin turbulent boundary layers. Note that all turbulent intensities were non-dimensionalized with duct bulk velocity.

#### 4.2 Analysis and Evaluation of Results

The experimental database established by this investigation is of benchmark quality, and the experimental conditions are representative of actual turbine cascade flows. The experimental Reynolds numbers, Deans numbers and boundary-layer characteristics are significantly different from previous benchmark curved-duct experimental parameters. Although incompressible, the turbulent flow Reynolds number of 328,000, based on duct width, combined with a 5 to 10 percent boundary layer thickness based on duct half-width, provides a very challenging flowfield for CFD code development.

LOW REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS



HIGH REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

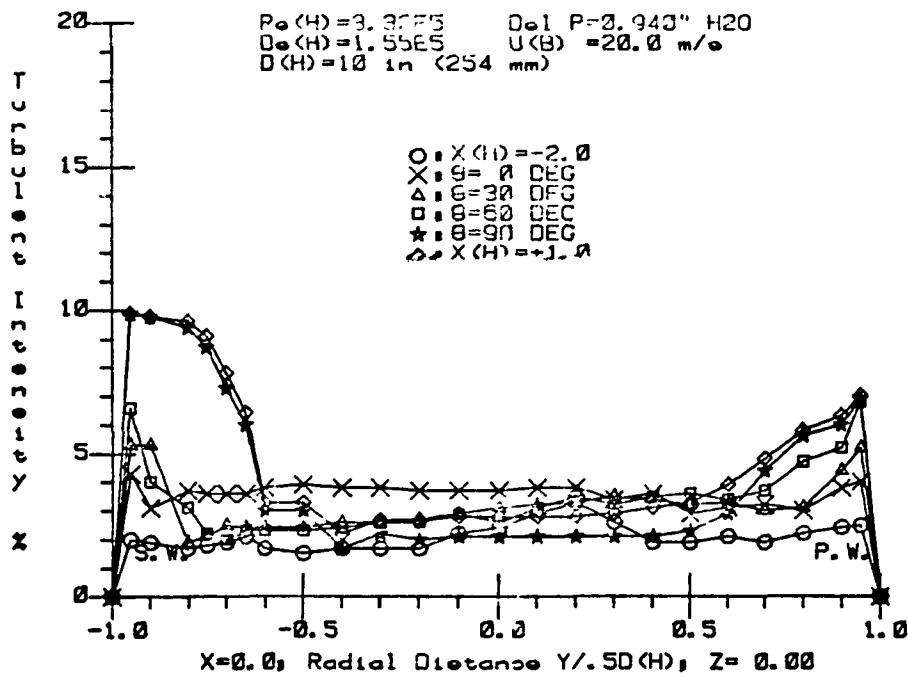


Figure 22. Turbulence Intensity Comparison,  $Z = 0.0$

and validation. The experimental conditions produce large velocity gradients in the axial and crossflow directions in the relatively thin boundary layer regions. A CFD code which provides good results for low-Reynolds-number, thick-boundary-layer flows may not accurately solve the realistic flowfield benchmarked in this investigation.

Since the numerical results were computed before the experimental results were obtained, actual test parameters and initial-boundary layer conditions were not utilized in the numerical investigation. Direct numerical-to-experimental comparison is not possible, however, the sensitivity study conducted with the CFD code highlights several areas of concern. Grid spacing refinement and improved turbulence modeling are the two recommended improvement areas for making the CFD code results agree with experimental results. The grid-refinement studies conducted in this investigation showed only a very small influence on the results, which were in poor agreement with experimental data. The addition of a simple turbulence model to the CFD computations also showed small sensitivity in the results. Thus this investigation has produced an experimental database for a relatively simple flowfield which provides a significant challenge for CFD code development

## 5. CONCLUSIONS AND RECOMMENDATIONS

This investigation complements the results of Taylor, Whitelaw and Yianneskis, ref. 1, and extends the experimental database to higher Reynolds number and thinner entrance boundary layers. The 5% to 10% thick boundary layers, based on duct half-width, resulted in a large region of near-potential flow in the duct core surrounded by developing boundary layers with large crossflows. The turbulent entrance boundary layer case at  $R_{ed} = 328,000$  provides an incompressible flowfield which approaches real turbine blade cascade characteristics. The experimental results of this investigation provide a challenging benchmark database for computational fluid dynamics code development.

Based on the CFD studies conducted as a part of this investigation the following recommendations are offered.

1. The grid spacing that was successful for calculating laminar flow with thick boundary layer will not be adequate for the thin boundary layer case.
2. The thin turbulent boundary layer flowfield will require improvements in both grid resolution turbulence modeling, and perhaps in the computational algorithms
3. Particular attention should be placed on the distribution of axial calculation planes in regions of high axial pressure gradient. The axial velocity profile must be accurately calculated to assure proper development of the crossflow field
4. The importance of the turbulence model and its influence on the CFD results was not determined in this investigation. However, the database established will allow the future investigation of the inadequacies of locally dependent turbulence models.

## LIST OF SYMBOLS

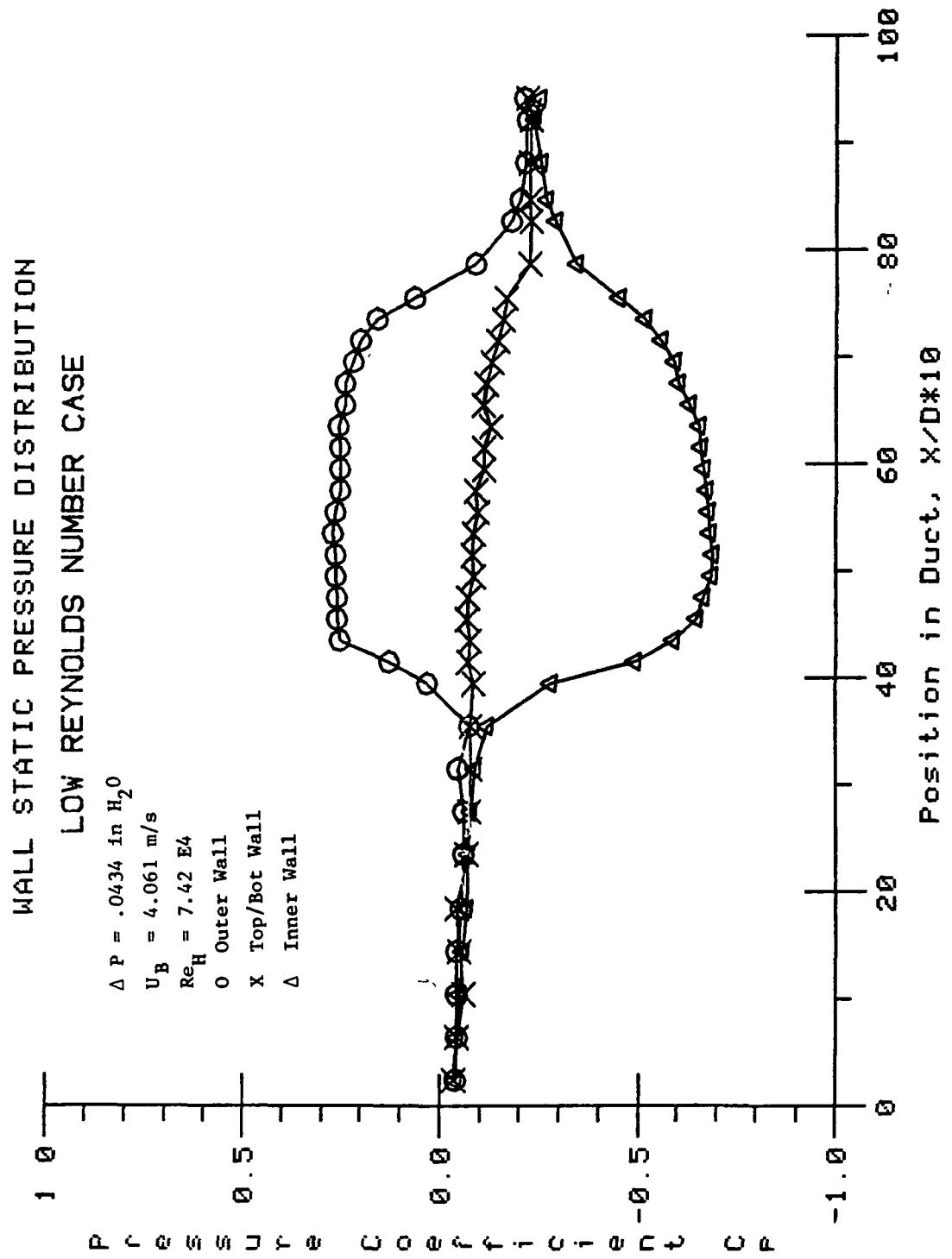
|                         |   |
|-------------------------|---|
| <i>A</i>                | Flow area   |
| <i>C<sub>p</sub></i>    | Static pressure coefficient - $\frac{P - P_{ref}}{q}$ |
| <i>D<sub>h</sub>, d</i> | Duct hydraulic diameter (width, height)               |
| <i>D<sub>e</sub></i>    | Deans number - $(d/2r_c)^{\frac{1}{2}} R_{ed}$        |
| <i>f</i>                | Signal frequency                                      |
| <i>N</i>                | Fringe crossing count                                 |
| <i>n</i>                | Number of clock pulses                                |
| <i>P</i>                | Pressure  |
| <i>q</i>                | Duct dynamic pressure (inlet)                         |
| <i>R<sub>ed</sub></i>   | Reynolds number based on <i>d</i>                     |
| <i>R<sub>i</sub></i>    | Duct inner wall radius                                |
| <i>R<sub>o</sub></i>    | Duct outer wall radius                                |
| <i>r<sub>c</sub></i>    | Mean radius of curvature                              |
| <i>U</i>                | Non-dimensional velocity ( <i>x</i> -direction)       |
| <i>u</i>                | <i>x</i> -velocity component                          |
| <i>V</i>                | Non-dimensional velocity ( <i>y</i> -direction)       |
| <i>v</i>                | <i>y</i> -velocity component                          |
| <i>W</i>                | Non-dimensional velocity ( <i>z</i> -direction)       |
| <i>w</i>                | <i>z</i> -velocity component                          |
| <i>x</i>                | Axial coordinate (main flow direction)                |
| <i>y</i>                | Radial coordinate                                     |
| <i>z</i>                | Vertical coordinate                                   |
| <i>S</i>                | Fringe spacing  |
| $\epsilon$              | Aperiodicity  |
| $\sigma$                | Turbulence intensity                                  |
| $\tau$                  | Fringe period   |

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2. Farmer, W.M., and Hornkohl, J.O.: Two-Component, Self-Aligning Laser Vector Velocimeter, Jol. of Applied Optics, Vol. 12. No. 11, November 1973, pp. 2636-2640.
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4. Thomas, P.D.: Numerical Methods for Predicting Flow Characteristics and Performance of Non-Axisymmetric Nozzles, NASA CR 3157, September, 1979.

**APPENDIX A**  
**Low Reynolds Number Data  $R_{ed} = 98,000$**

- Figure A-1 Wall Static Pressure Distribution**
- Figure A-2 Axial Velocity Profile,  $Z = 0.00$**
- Figure A-3 Axial Velocity Profile,  $Z = -0.50$**
- Figure A-4 Axial Velocity Profile,  $Z = -0.95$**
- Figure A-5 Crossflow Velocity Field,  $\theta = 0^\circ$**
- Figure A-6 Crossflow Velocity Field,  $\theta = 30^\circ$**
- Figure A-7 Crossflow Velocity Field,  $\theta = 60^\circ$**
- Figure A-8 Crossflow Velocity Field,  $\theta = 90^\circ$**
- Figure A-9 Crossflow Velocity Field, Exit + 1D**
- Figure A-10 Turbulence Intensity,  $Z = 0.00$**
- Figure A-11 Turbulence Intensity,  $Z = -0.30$**
- Figure A-12 Turbulence Intensity,  $Z = -0.60$**



A-1

Figure A-1 Wall Static Pressure Distribution

## LOW REYNOLDS MEAN FLOW VELOCITY PROFILES

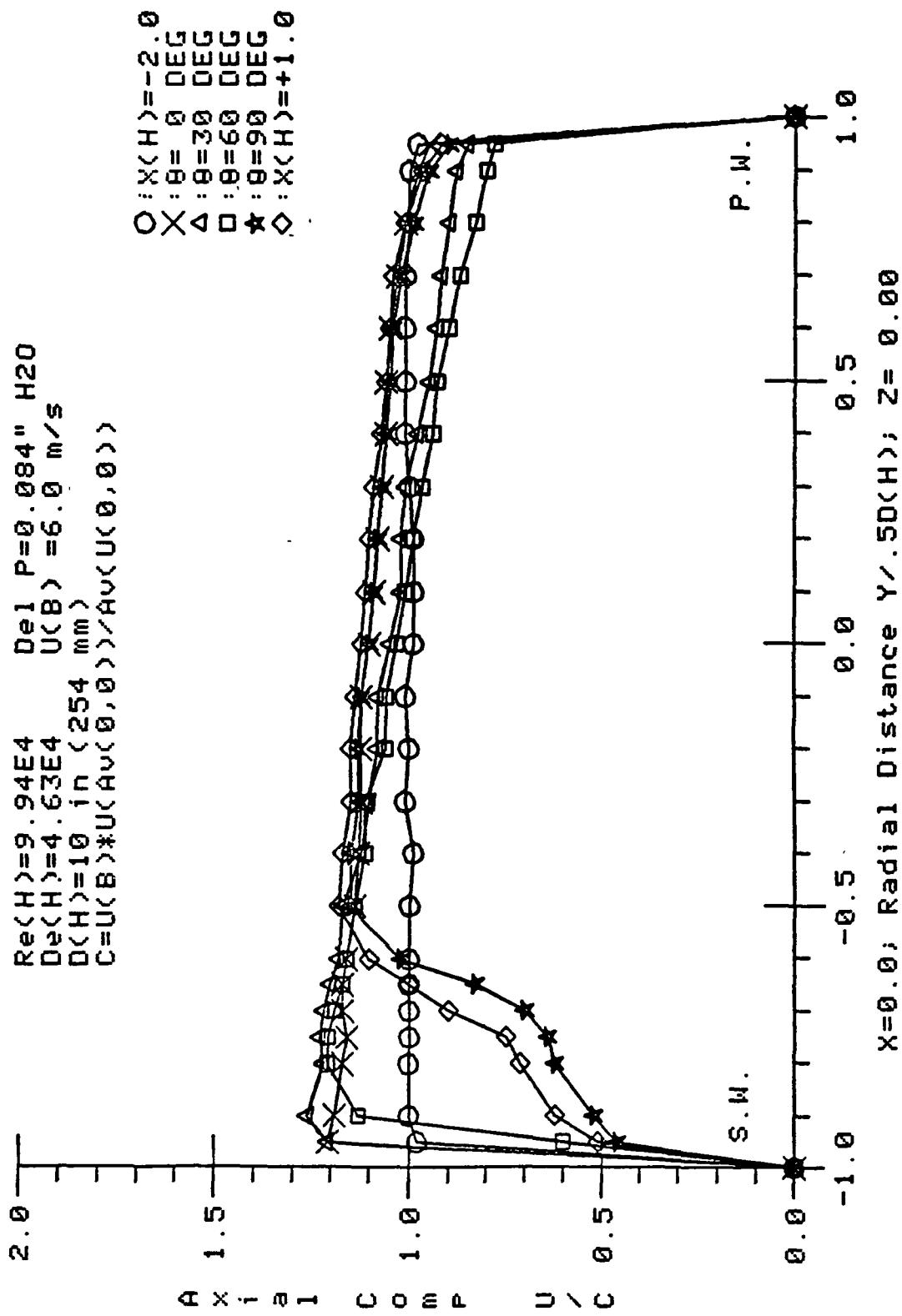
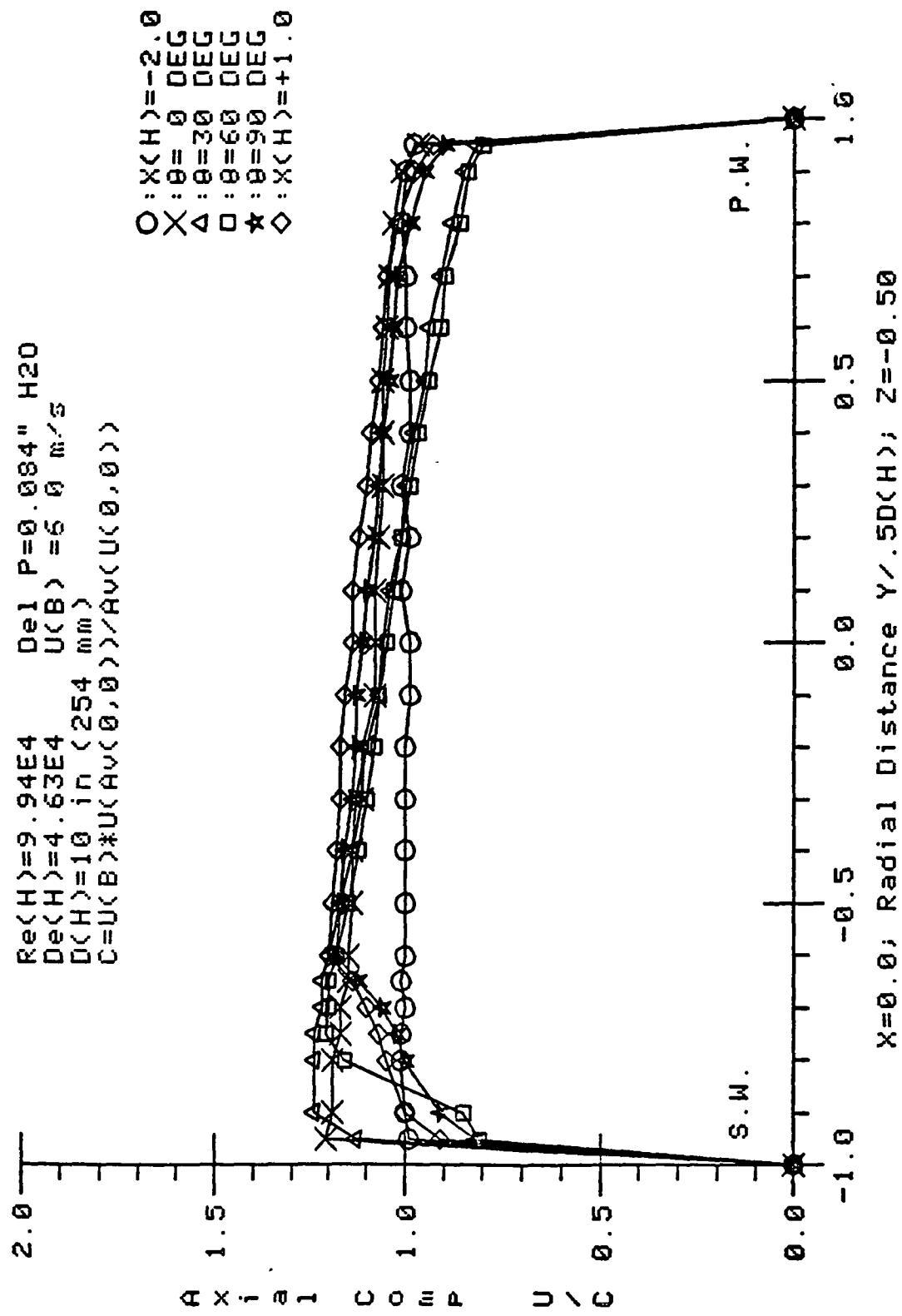


Figure A-2 Axial Velocity Profile,  $Z = 0.00$

### LOW REYNOLDS MEAN FLOW VELOCITY PROFILES



A-3

Figure A-3 Axial Velocity Profile,  $Z = -0.50$

### LOW REYNOLDS MEAN FLOW VELOCITY PROFILES

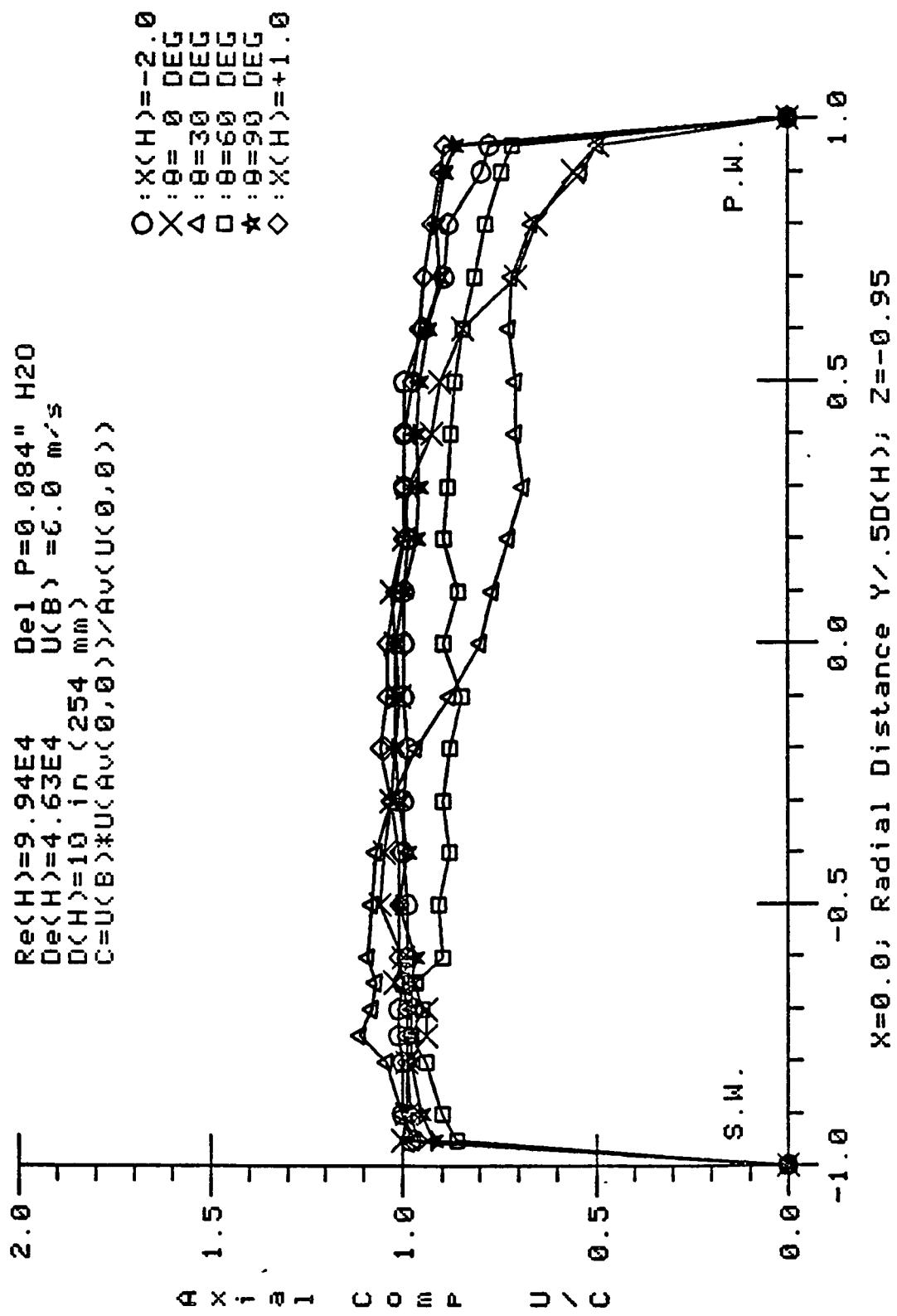


Figure A-4 Axial Velocity Profile,  $Z = -0.95$

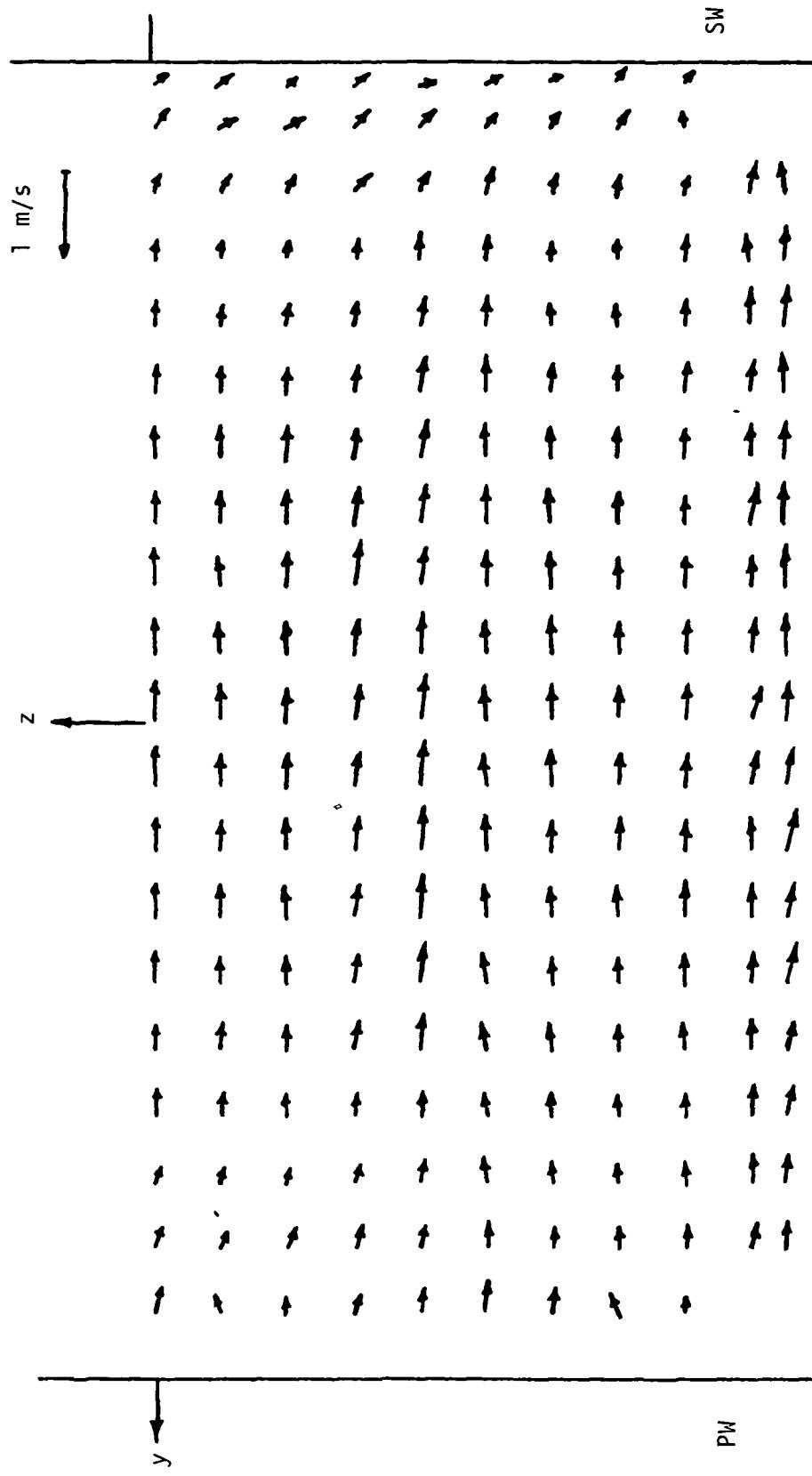


Figure A-5 Crossflow Velocity Field,  $\theta = 0^\circ$

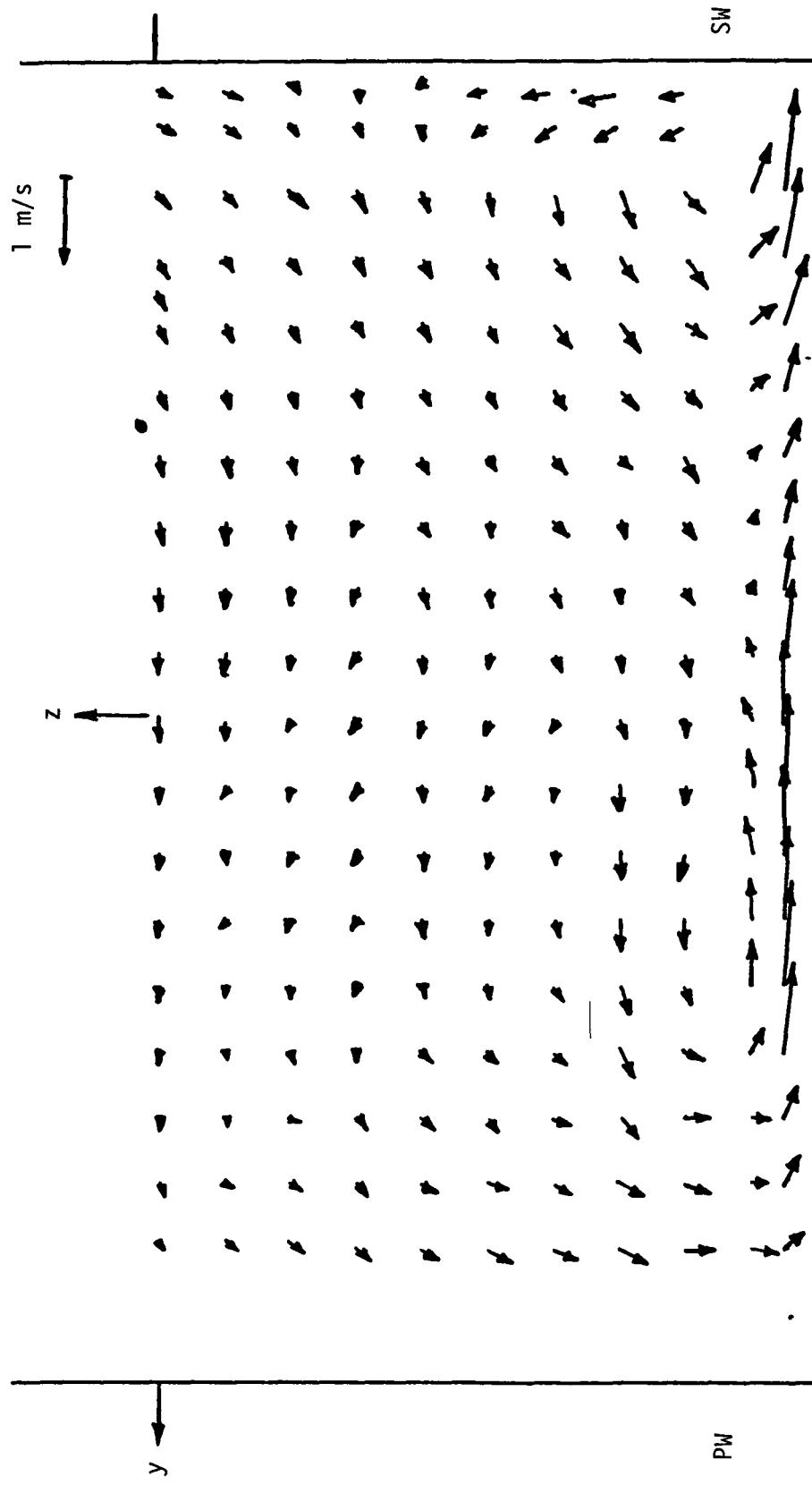


Figure A-6 Crossflow Velocity Field,  $\theta = 30^\circ$

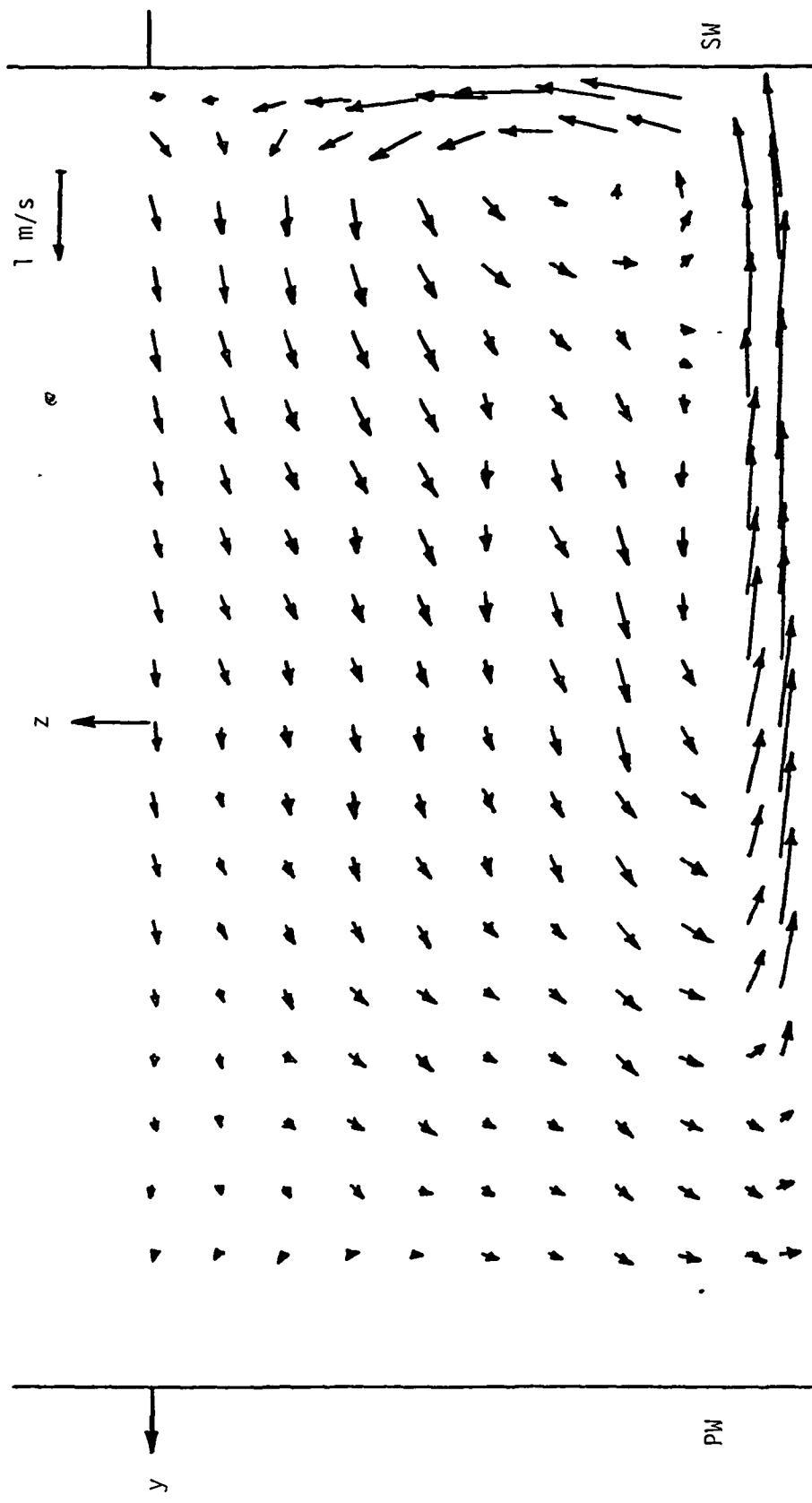


Figure A-7 Crossflow Velocity Field,  $\theta = 60^\circ$

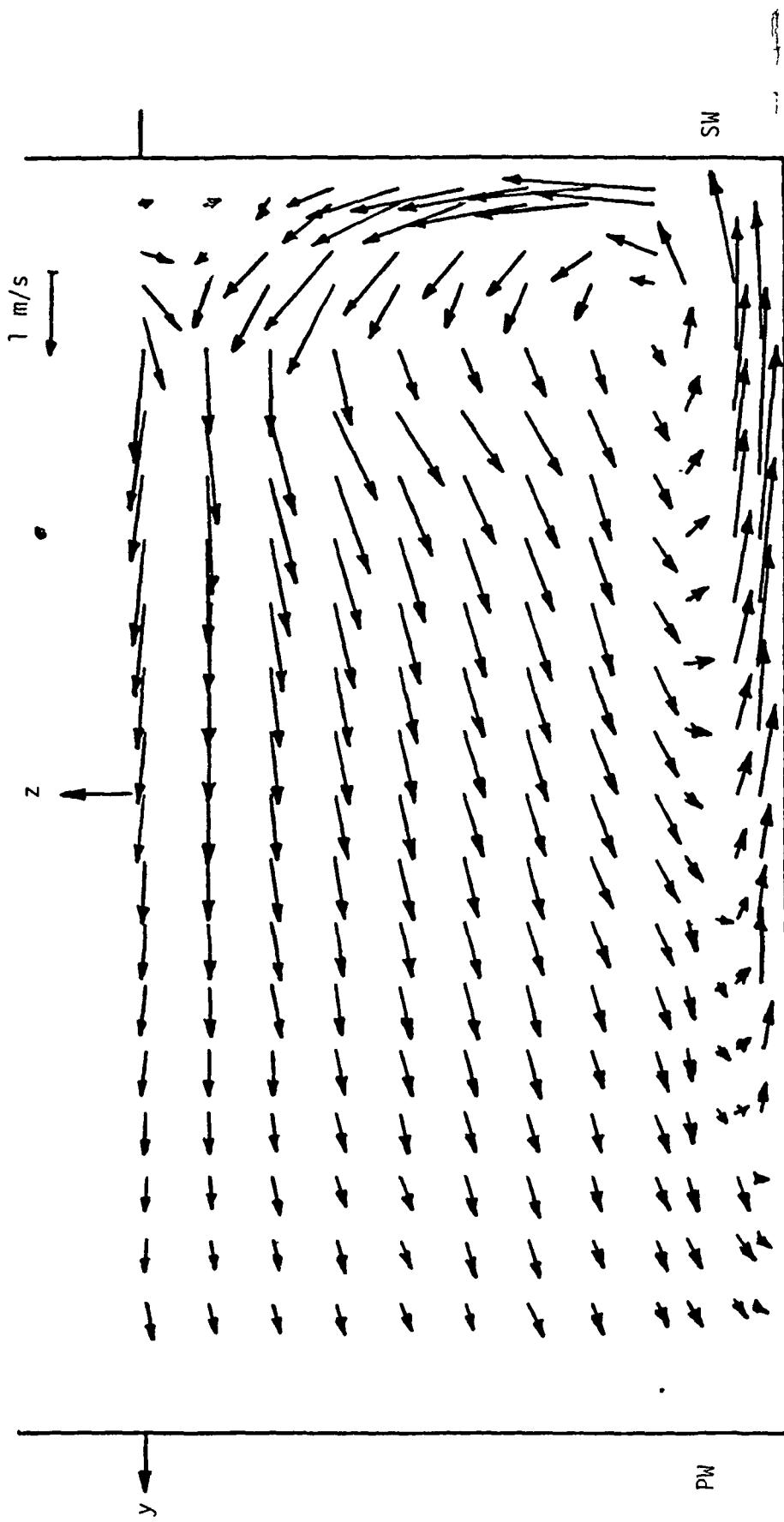
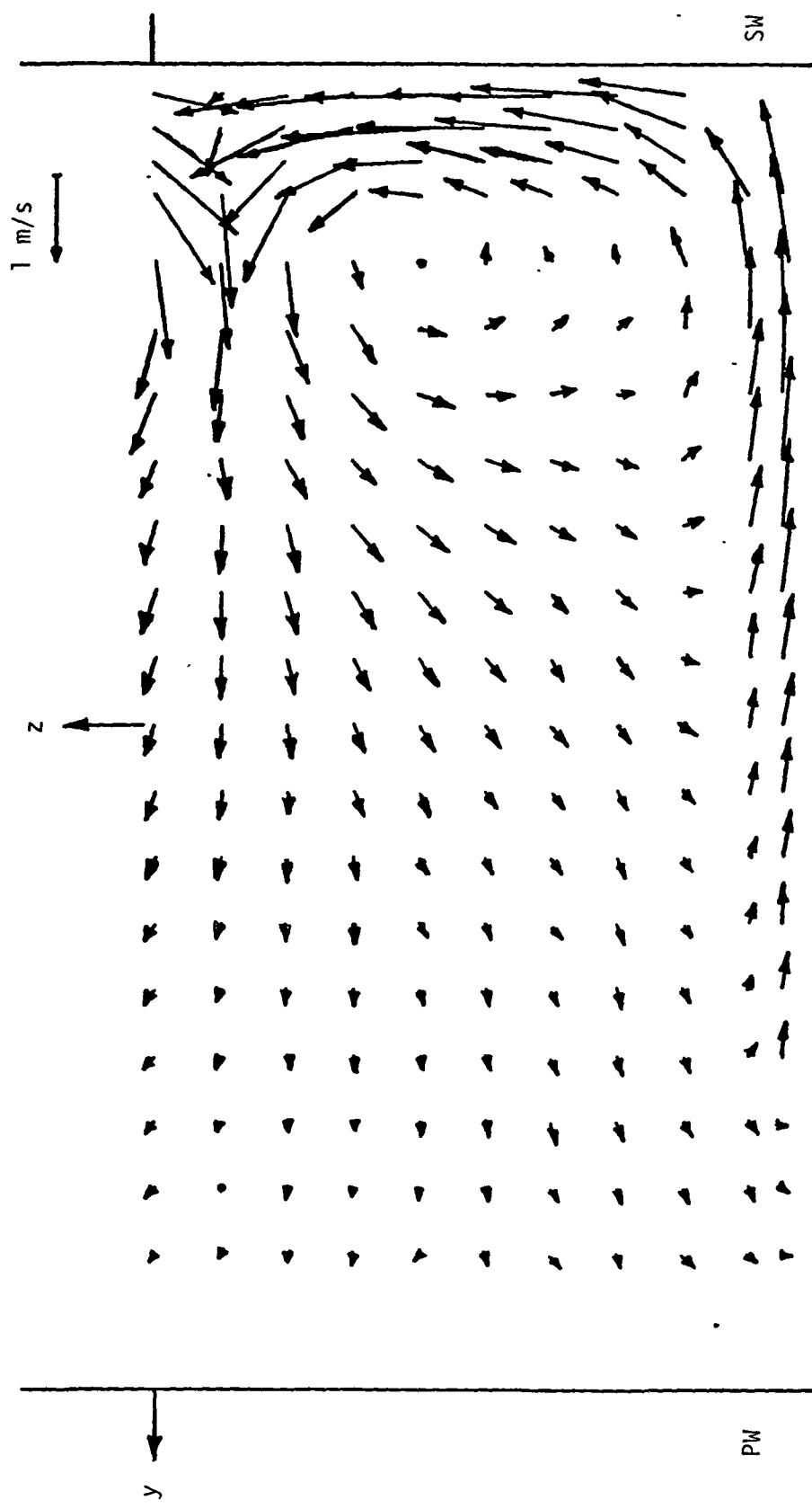


Figure A-8 Crossflow Velocity Field,  $\theta = 90^\circ$



A-9

Figure A-9 Crossflow Velocity Field, Exit + 1D

## LOW REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

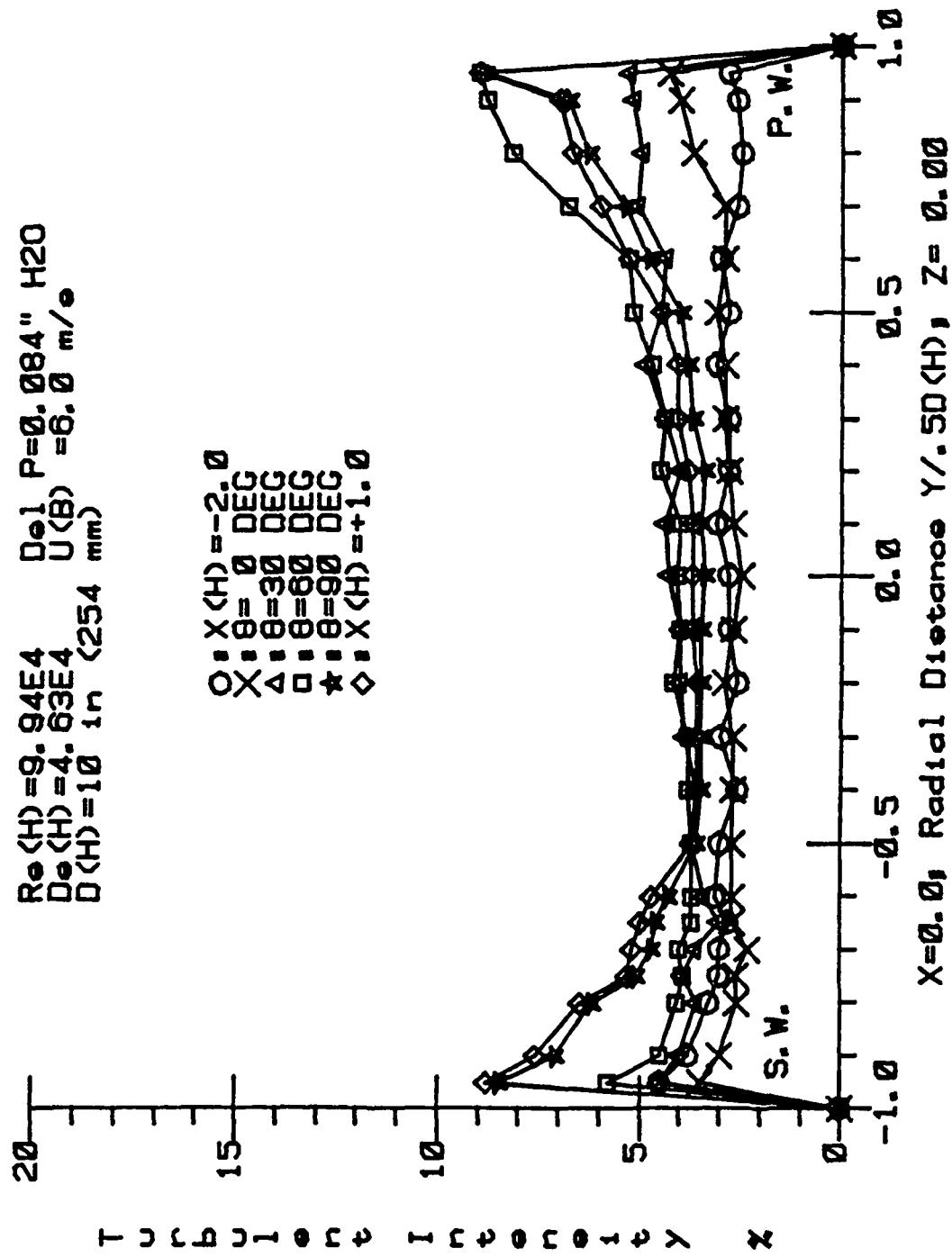


Figure A-10 Turbulence Intensity,  $Z = 0.00$

## LOW REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

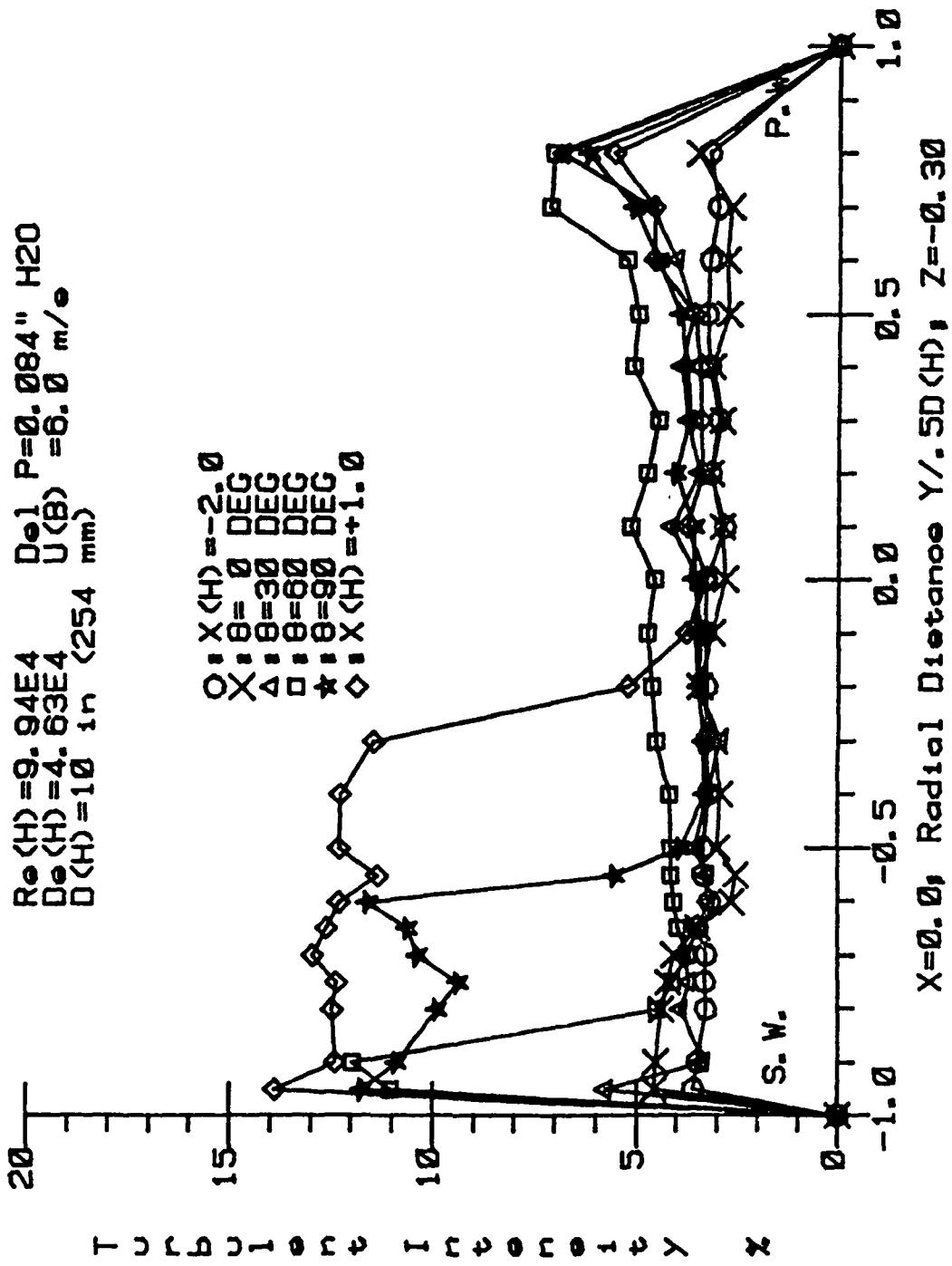


Figure A-11 Turbulence Intensity,  $Z = -0.30$

LOW REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

$Re(H) = 9.94 \times 10^4$     $D = 1$ ,  $P = 0.084"$  H2O  
 $D_e(H) = 4.63 \times 10^4$     $U(B) = 6.0$  m/s  
 $D(H) = 10$  in (254 mm)

$\circ$  :  $X(H) = -2.0$   
 $\times$  :  $\theta = 0$  DEC  
 $\triangle$  :  $\theta = 30$  DEC  
 $\square$  :  $\theta = 60$  DEC  
 $\star$  :  $\theta = 90$  DEC  
 $\diamond$  :  $X(H) = +1.0$

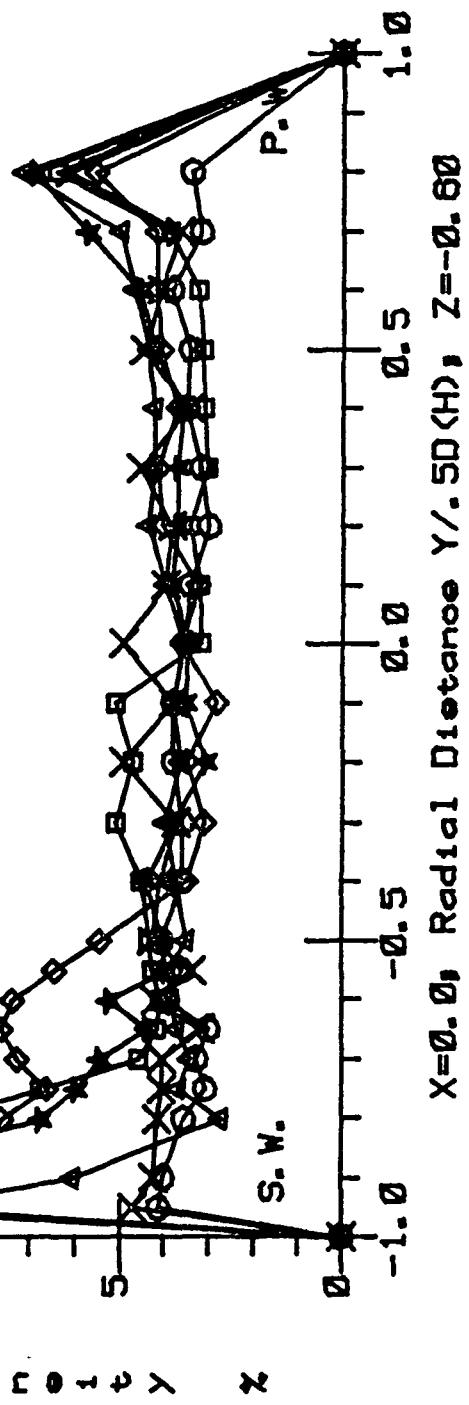


Figure A-12 Turbulence Intensity,  $Z = -0.60$

## **APPENDIX B**

**High Reynolds Number Data  $R_{ed} = 328,000$**

**Figure B-1 Wall Static Pressure Distribution**

**Figure B-2 Axial Velocity Profile,  $Z = 0.00$**

**Figure B-3 Axial Velocity Profile,  $Z = -0.50$**

**Figure B-4 Axial Velocity Profile,  $Z = -0.95$**

**Figure B-5 Turbulence Intensity,  $Z = 0.00$**

**Figure B-6 Turbulence Intensity,  $Z = -0.30$**

**Figure B-7 Turbulence Intensity,  $Z = -0.60$**

**Figure B-8 Turbulence Intensity,  $Z = -0.80$**

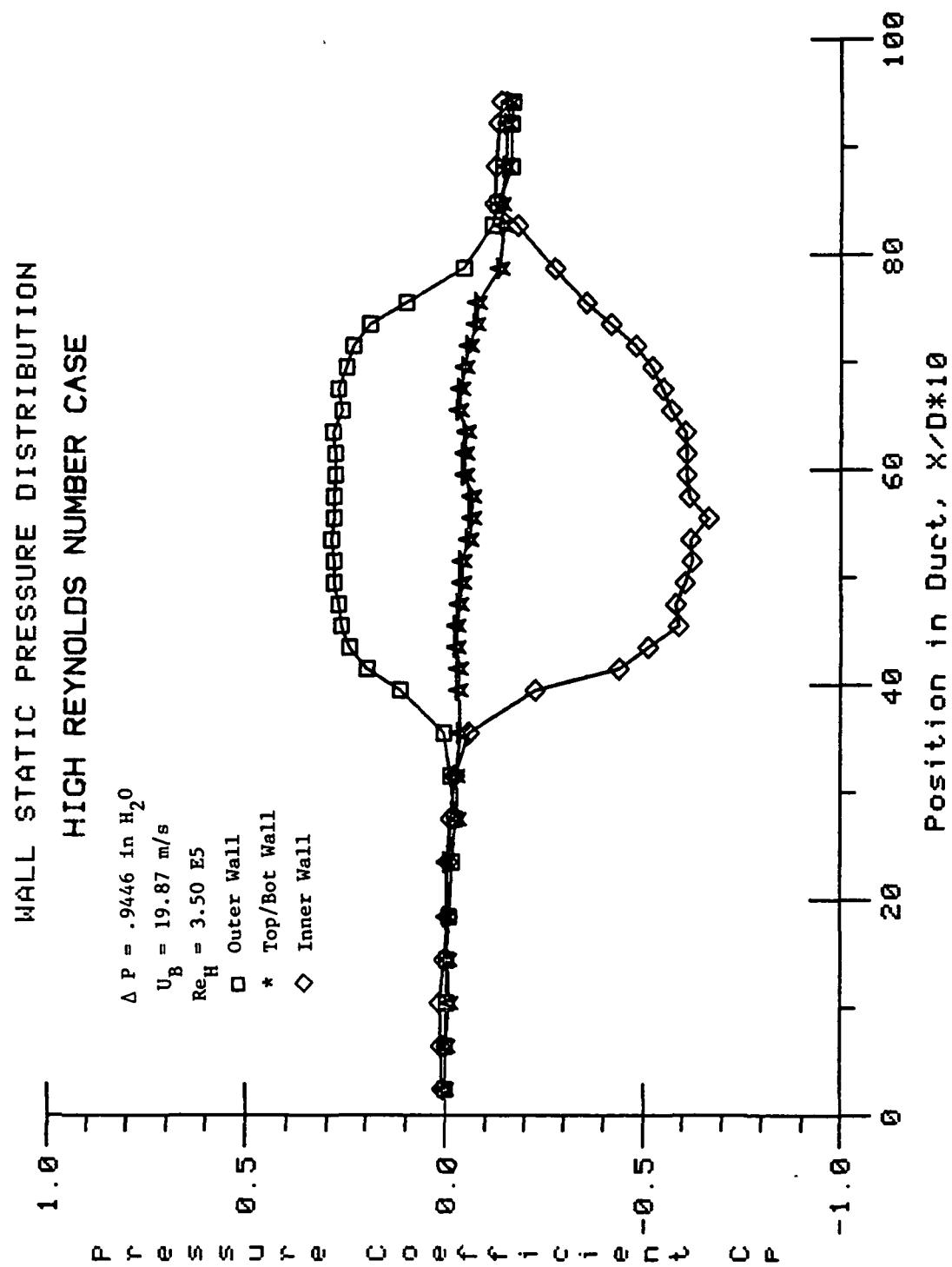


Figure B-1 Wall Static Pressure Distribution

## HIGH REYNOLDS MEAN FLOW VELOCITY PROFILES

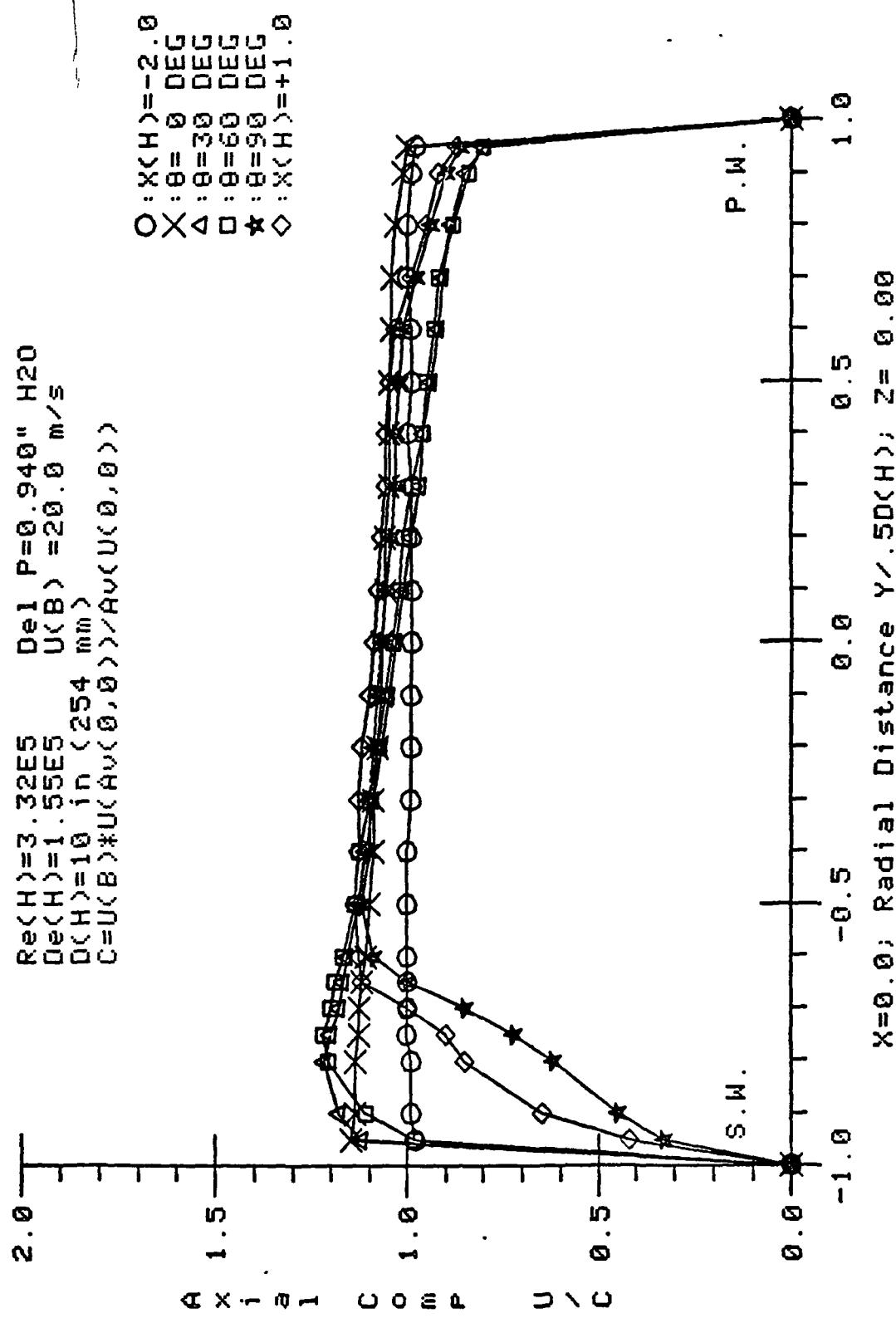
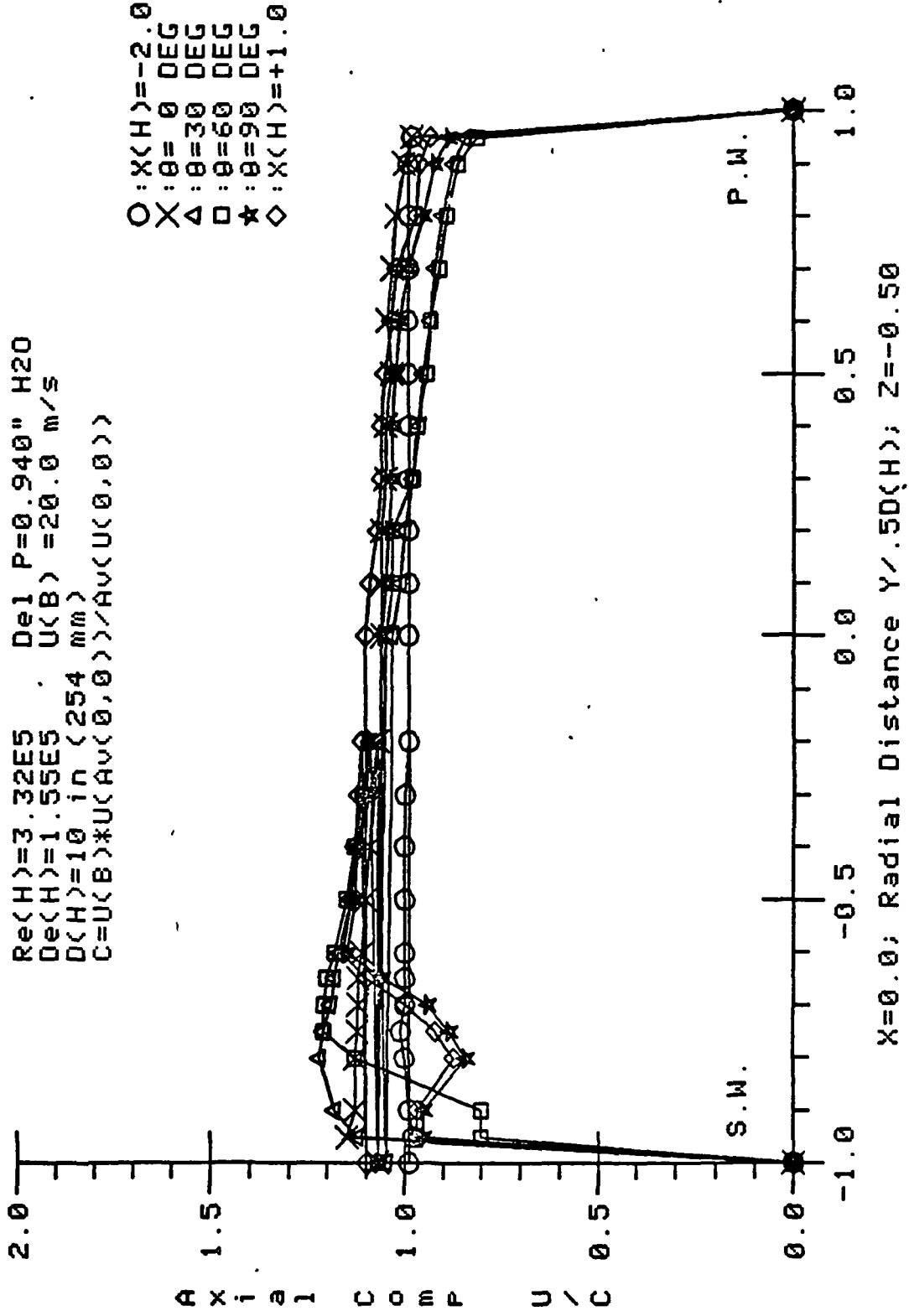


Figure B-2 Axial Velocity Profile,  $Z = 0.00$

## HIGH REYNOLDS MEAN FLOW VELOCITY PROFILES



B-3

Figure B-3 Axial Velocity Profile,  $Z = -0.50$

## HIGH REYNOLDS MEAN FLOW VELOCITY PROFILES

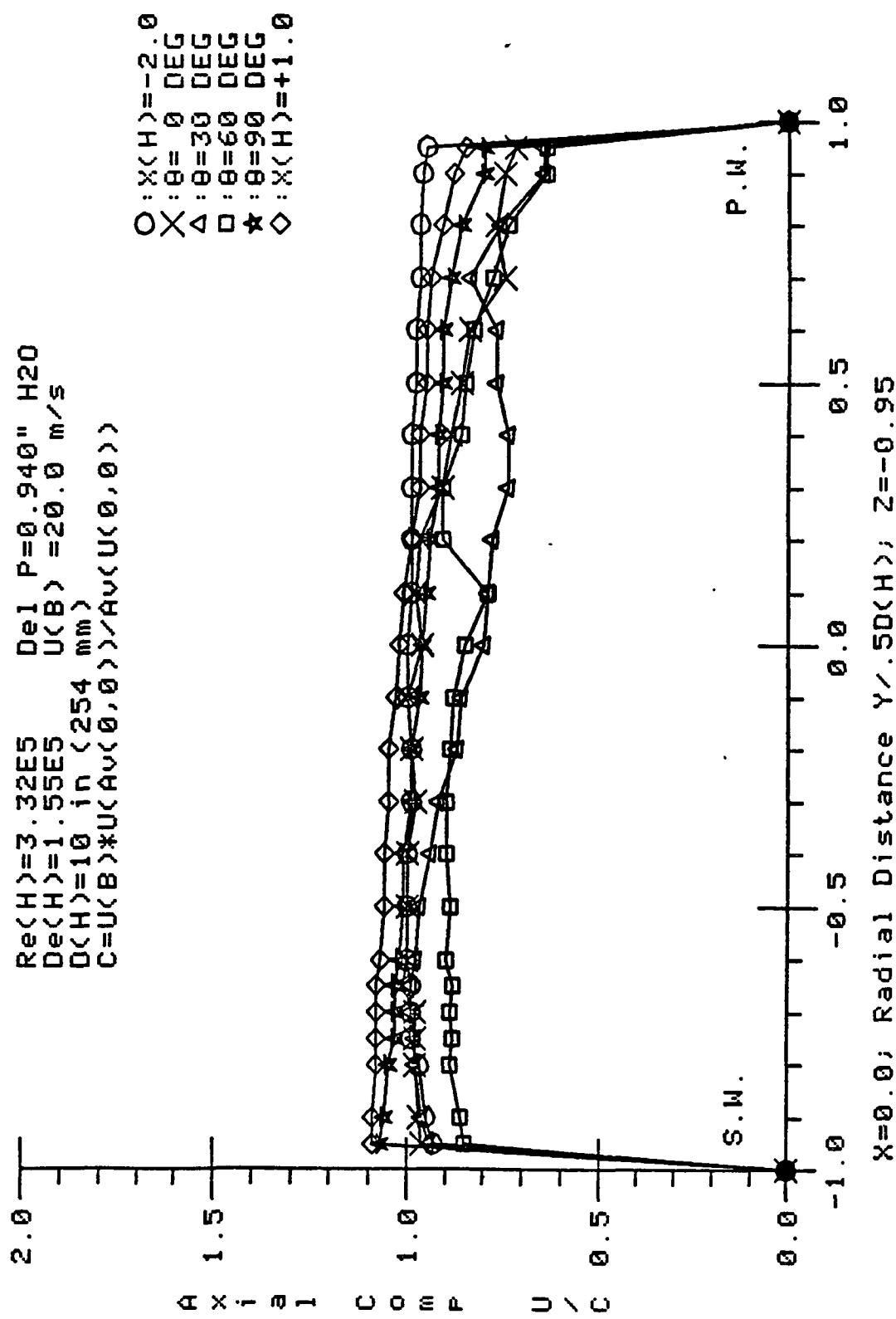


Figure B-4 Axial Velocity Profile,  $Z = -0.95$

## HIGH REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

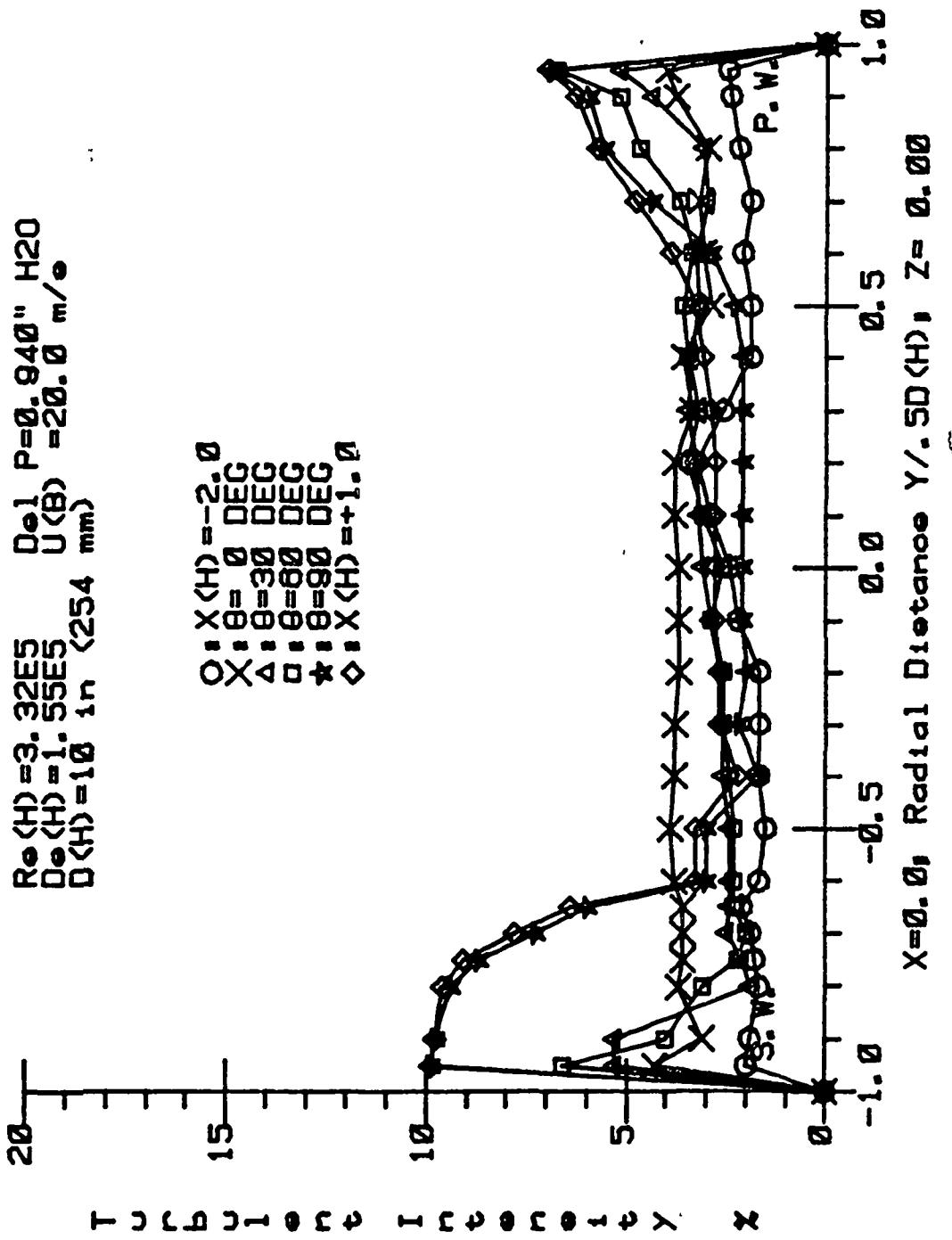


Figure B-5 Turbulence Intensity,  $Z = 0.00$

## HIGH REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

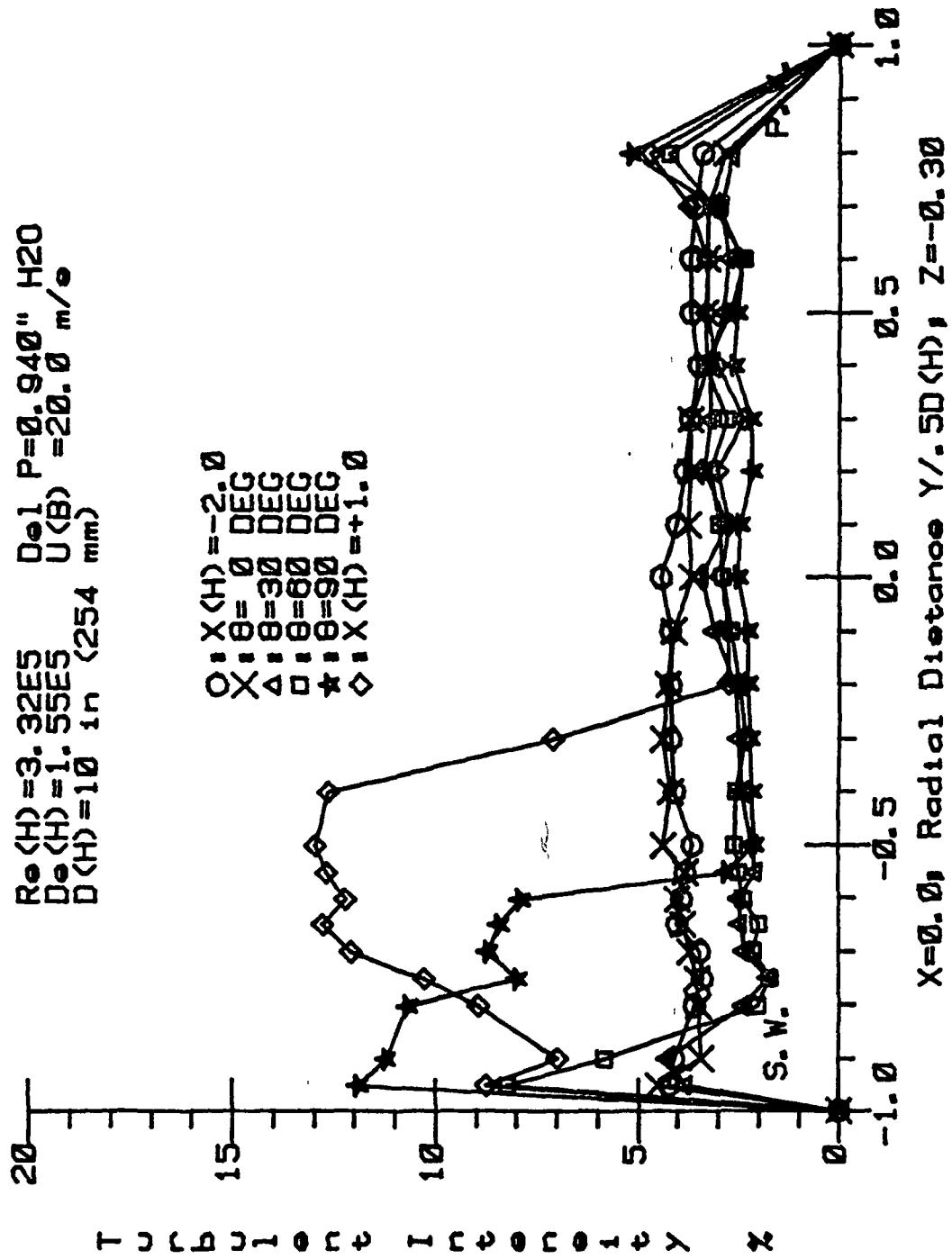


Figure B-6 Turbulence Intensity,  $Z = -0.30$

## HIGH REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

$Re(H) = 3,32E5$        $D = 1, P = 0,940'' H_2O$   
 $De(H) = 1,55E5$        $U(B) = 20,0 \text{ m/s}$   
 $D(H) = 10 \text{ in} (254 \text{ mm})$

$\circ : X(H) = -2,0$   
 $\times : \theta = 0 \text{ DEG}$   
 $\triangle : \theta = 30 \text{ DEG}$   
 $\square : \theta = 60 \text{ DEG}$   
 $\star : \theta = 90 \text{ DEG}$   
 $\diamond : X(H) = +1,0$

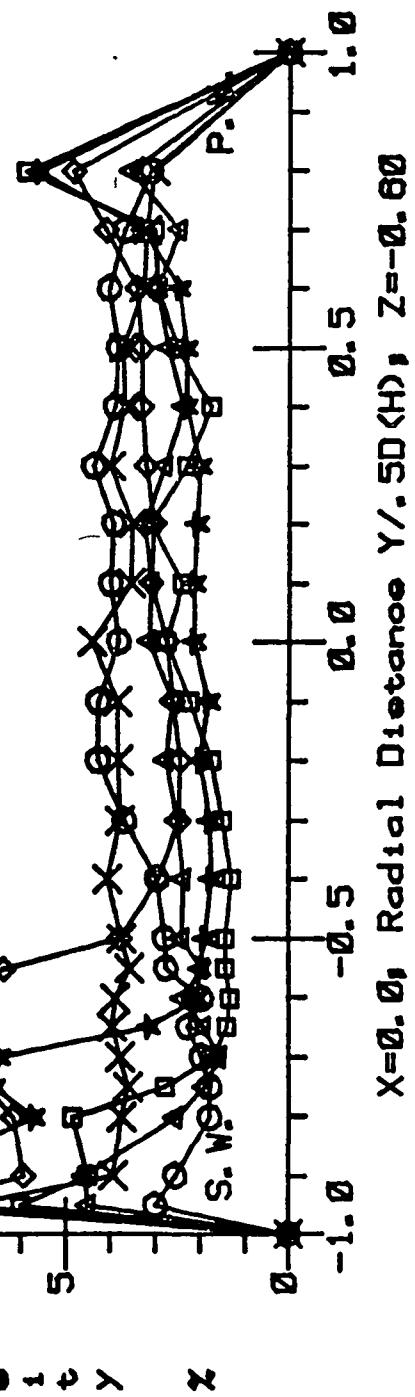


Figure B-7 Turbulence Intensity,  $Z = -0.60$

## HIGH REYNOLDS TURBULENT INTENSITY DISTRIBUTIONS

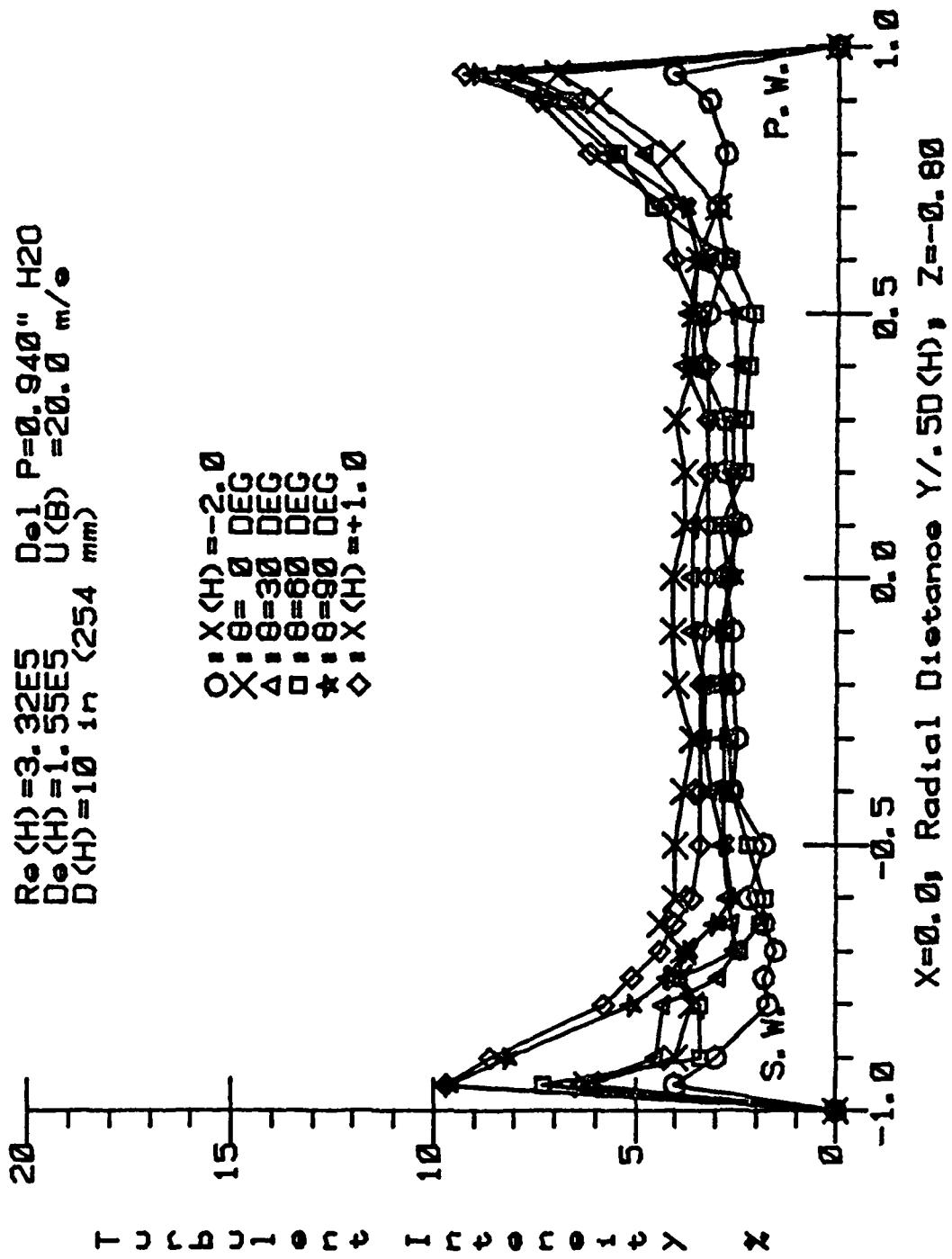


Figure B-8 Turbulence Intensity,  $Z = -0.80$

**APPENDIX C**  
**Low Reynolds Number Tabulated Data**

**Table C-1 Station 2,  $X(H) = 2.0$  Entrance**

**Table C-2 Station 4,  $\theta = 0^\circ$**

**Table C-3 Station 6,  $\theta = 30^\circ$**

**Table C-4 Station 8,  $\theta = 60^\circ$**

**Table C-5 Station 10,  $\theta = 90^\circ$**

**Table C-6 Station 11,  $X(H) = 1.0$  Exit**

The tunnel coordinate positions have been non-dimensionalized on duct half-width  $Dh/z$ . All velocities have been non-dimensionalized on bulk velocity (6 m/s).

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Table C-1, Station 2, X(H) = - 2.0 Entrance

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.70     | 0.00     | 1.02        | 1.01     | 0.005    | -0.005   | 0.026         | 0.026     | 0.026     | 0.018     |
| 0.60     | 0.00     | 1.01        | 1.01     | 0.002    | -0.005   | 0.030         | 0.030     | 0.025     | 0.023     |
| 0.50     | 0.00     | 1.01        | 1.01     | 0.002    | -0.002   | 0.028         | 0.028     | 0.023     | 0.021     |
| 0.40     | 0.00     | 1.01        | 1.01     | 0.003    | -0.002   | 0.031         | 0.031     | 0.021     | 0.020     |
| 0.30     | 0.00     | 1.00        | 1.00     | 0.003    | -0.002   | 0.028         | 0.028     | 0.025     | 0.021     |
| 0.20     | 0.00     | 0.99        | 0.99     | 0.003    | -0.005   | 0.028         | 0.028     | 0.025     | 0.023     |
| 0.10     | 0.00     | 0.99        | 0.99     | 0.003    | 0.000    | 0.031         | 0.031     | 0.023     | 0.020     |
| 0.00     | 0.00     | 0.99        | 0.99     | 0.002    | -0.002   | 0.028         | 0.028     | 0.021     | 0.021     |
| -0.05    | 0.00     | 0.99        | 0.99     | 0.007    | -0.007   | 0.028         | 0.028     | 0.023     | 0.023     |
| -0.10    | 0.00     | 1.01        | 1.01     | 0.010    | -0.005   | 0.028         | 0.028     | 0.020     | 0.025     |
| -0.15    | 0.00     | 0.99        | 0.99     | 0.005    | -0.002   | 0.031         | 0.031     | 0.023     | 0.023     |
| -0.20    | 0.00     | 1.00        | 1.00     | 0.008    | -0.002   | 0.026         | 0.026     | 0.026     | 0.021     |
| -0.25    | 0.00     | 1.01        | 1.01     | 0.012    | -0.003   | 0.030         | 0.030     | 0.025     | 0.025     |
| -0.30    | 0.00     | 1.01        | 1.01     | 0.010    | -0.005   | 0.030         | 0.030     | 0.025     | 0.023     |
| -0.35    | 0.00     | 0.99        | 0.99     | 0.007    | -0.007   | 0.031         | 0.031     | 0.023     | 0.026     |
| -0.40    | 0.00     | 1.00        | 1.00     | 0.007    | -0.005   | 0.026         | 0.026     | 0.028     | 0.023     |
| -0.45    | 0.00     | 1.00        | 1.00     | 0.007    | -0.008   | 0.030         | 0.030     | 0.025     | 0.023     |
| -0.50    | 0.00     | 1.00        | 1.00     | 0.005    | -0.008   | 0.030         | 0.030     | 0.023     | 0.026     |
| -0.55    | 0.00     | 1.00        | 1.00     | 0.010    | -0.007   | 0.030         | 0.030     | 0.021     | 0.021     |
| -0.60    | 0.00     | 1.00        | 1.00     | 0.012    | -0.008   | 0.031         | 0.031     | 0.023     | 0.023     |
| -0.65    | 0.00     | 1.00        | 1.00     | 0.007    | -0.010   | 0.030         | 0.030     | 0.025     | 0.021     |
| -0.70    | 0.00     | 1.00        | 1.00     | 0.007    | -0.007   | 0.028         | 0.028     | 0.026     | 0.023     |
| -0.75    | 0.00     | 1.01        | 1.01     | 0.010    | -0.008   | 0.030         | 0.030     | 0.025     | 0.020     |
| -0.80    | 0.00     | 1.00        | 1.00     | 0.008    | -0.015   | 0.030         | 0.030     | 0.025     | 0.025     |
| -0.80    | -0.10    | 1.00        | 1.00     | 0.012    | -0.015   | 0.028         | 0.028     | 0.023     | 0.023     |
| -0.75    | -0.10    | 0.99        | 0.99     | 0.012    | -0.013   | 0.028         | 0.028     | 0.023     | 0.026     |
| -0.70    | -0.10    | 1.00        | 1.00     | 0.008    | -0.010   | 0.030         | 0.031     | 0.025     | 0.023     |
| -0.65    | -0.10    | 1.00        | 1.00     | 0.007    | -0.008   | 0.030         | 0.030     | 0.026     | 0.023     |
| -0.60    | -0.10    | 1.00        | 1.00     | 0.013    | -0.007   | 0.028         | 0.028     | 0.028     | 0.023     |
| -0.55    | -0.10    | 1.00        | 1.00     | 0.012    | -0.007   | 0.028         | 0.028     | 0.023     | 0.021     |
| -0.50    | -0.10    | 0.99        | 0.99     | 0.008    | -0.010   | 0.028         | 0.028     | 0.023     | 0.021     |
| -0.45    | -0.10    | 1.00        | 1.00     | 0.012    | -0.003   | 0.028         | 0.028     | 0.025     | 0.021     |
| -0.40    | -0.10    | 1.00        | 1.00     | 0.010    | -0.007   | 0.028         | 0.028     | 0.025     | 0.025     |
| -0.35    | -0.10    | 0.98        | 0.98     | 0.005    | -0.007   | 0.030         | 0.030     | 0.025     | 0.021     |
| -0.30    | -0.10    | 1.00        | 1.00     | 0.007    | -0.002   | 0.030         | 0.030     | 0.023     | 0.021     |
| -0.25    | -0.10    | 1.01        | 1.00     | 0.008    | -0.003   | 0.031         | 0.031     | 0.026     | 0.023     |
| -0.20    | -0.10    | 1.00        | 0.99     | 0.010    | 0.003    | 0.030         | 0.030     | 0.021     | 0.025     |
| -0.15    | -0.10    | 0.99        | 0.99     | 0.008    | 0.003    | 0.026         | 0.026     | 0.021     | 0.021     |
| -0.10    | -0.10    | 1.00        | 1.00     | 0.008    | -0.005   | 0.028         | 0.028     | 0.023     | 0.023     |
| -0.05    | -0.10    | 1.00        | 1.00     | 0.007    | 0.003    | 0.028         | 0.028     | 0.023     | 0.021     |
| 0.00     | -0.10    | 0.99        | 0.99     | 0.005    | -0.002   | 0.028         | 0.028     | 0.025     | 0.020     |
| 0.10     | -0.10    | 0.99        | 0.99     | 0.003    | -0.007   | 0.032         | 0.033     | 0.023     | 0.027     |
| 0.20     | -0.10    | 1.00        | 1.00     | 0.007    | -0.007   | 0.032         | 0.033     | 0.025     | 0.025     |
| 0.30     | -0.10    | 1.01        | 1.01     | 0.002    | -0.003   | 0.030         | 0.030     | 0.023     | 0.023     |
| 0.40     | -0.10    | 0.99        | 0.99     | 0.002    | -0.007   | 0.030         | 0.030     | 0.027     | 0.023     |
| 0.50     | -0.10    | 1.00        | 1.00     | 0.003    | -0.007   | 0.033         | 0.033     | 0.025     | 0.023     |
| 0.60     | -0.10    | 1.01        | 1.01     | 0.003    | -0.008   | 0.028         | 0.028     | 0.022     | 0.023     |
| 0.70     | -0.10    | 1.00        | 1.00     | 0.010    | -0.015   | 0.030         | 0.030     | 0.028     | 0.023     |
| 0.80     | -0.10    | 1.00        | 1.00     | 0.012    | -0.015   | 0.032         | 0.032     | 0.025     | 0.027     |
| 0.80     | -0.20    | 1.00        | 1.00     | 0.008    | -0.015   | 0.032         | 0.032     | 0.025     | 0.027     |
| 0.70     | -0.20    | 1.00        | 1.00     | 0.008    | -0.010   | 0.032         | 0.032     | 0.023     | 0.023     |
| 0.60     | -0.20    | 1.01        | 1.01     | 0.008    | -0.012   | 0.032         | 0.032     | 0.022     | 0.025     |
| 0.50     | -0.20    | 1.01        | 1.01     | 0.002    | -0.008   | 0.028         | 0.028     | 0.022     | 0.025     |
| 0.40     | -0.20    | 1.00        | 1.00     | 0.003    | -0.012   | 0.032         | 0.032     | 0.027     | 0.025     |
| 0.30     | -0.20    | 1.00        | 0.99     | 0.002    | -0.010   | 0.028         | 0.028     | 0.025     | 0.025     |
| 0.20     | -0.20    | 0.97        | 0.97     | 0.010    | -0.008   | 0.033         | 0.033     | 0.023     | 0.027     |
| 0.10     | -0.20    | 1.00        | 1.00     | 0.007    | -0.008   | 0.030         | 0.030     | 0.025     | 0.023     |
| 0.00     | -0.20    | 0.99        | 0.99     | 0.007    | -0.008   | 0.035         | 0.035     | 0.022     | 0.027     |
| -0.05    | -0.20    | 1.00        | 0.99     | 0.008    | -0.010   | 0.030         | 0.030     | 0.023     | 0.028     |
| -0.10    | -0.20    | 1.00        | 1.00     | 0.012    | -0.012   | 0.032         | 0.032     | 0.022     | 0.030     |

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| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.15    | -0.20    | 0.99            | 0.99      | 0.008     | -0.008    | 0.033            | 0.033 | 0.023 | 0.027 |
| -0.20    | -0.20    | 0.98            | 0.98      | 0.007     | -0.008    | 0.032            | 0.032 | 0.022 | 0.027 |
| -0.25    | -0.20    | 0.99            | 0.99      | 0.007     | -0.012    | 0.032            | 0.032 | 0.025 | 0.025 |
| -0.30    | -0.20    | 1.00            | 1.00      | 0.007     | -0.012    | 0.032            | 0.032 | 0.023 | 0.028 |
| -0.35    | -0.20    | 0.99            | 0.99      | 0.010     | -0.012    | 0.035            | 0.035 | 0.025 | 0.027 |
| -0.40    | -0.20    | 0.99            | 0.99      | 0.008     | -0.010    | 0.037            | 0.033 | 0.023 | 0.027 |
| -0.45    | -0.20    | 1.01            | 1.01      | 0.013     | -0.012    | 0.030            | 0.030 | 0.022 | 0.028 |
| -0.50    | -0.20    | 1.00            | 1.00      | 0.010     | -0.010    | 0.033            | 0.033 | 0.023 | 0.025 |
| -0.55    | -0.20    | 1.00            | 1.00      | 0.013     | -0.017    | 0.030            | 0.032 | 0.023 | 0.032 |
| -0.60    | -0.20    | 1.01            | 1.01      | 0.008     | -0.013    | 0.032            | 0.032 | 0.022 | 0.028 |
| -0.65    | -0.20    | 1.01            | 1.00      | 0.010     | -0.012    | 0.035            | 0.035 | 0.023 | 0.027 |
| -0.70    | -0.20    | 1.00            | 1.00      | 0.012     | -0.010    | 0.033            | 0.033 | 0.022 | 0.025 |
| -0.75    | -0.20    | 1.00            | 1.00      | 0.008     | -0.013    | 0.032            | 0.033 | 0.027 | 0.027 |
| -0.80    | -0.20    | 1.00            | 1.00      | 0.012     | -0.015    | 0.032            | 0.032 | 0.023 | 0.027 |
| -0.80    | -0.30    | 1.01            | 1.01      | 0.012     | -0.013    | 0.033            | 0.033 | 0.023 | 0.025 |
| -0.75    | -0.30    | 0.99            | 0.99      | 0.008     | -0.012    | 0.033            | 0.033 | 0.022 | 0.028 |
| -0.70    | -0.30    | 1.00            | 1.00      | 0.012     | -0.017    | 0.033            | 0.033 | 0.023 | 0.027 |
| -0.65    | -0.30    | 1.00            | 1.00      | 0.005     | -0.010    | 0.035            | 0.035 | 0.022 | 0.027 |
| -0.60    | -0.30    | 1.01            | 1.01      | 0.008     | -0.018    | 0.032            | 0.032 | 0.023 | 0.030 |
| -0.55    | -0.30    | 0.98            | 0.98      | 0.010     | -0.010    | 0.033            | 0.033 | 0.023 | 0.025 |
| -0.50    | -0.30    | 0.98            | 0.97      | 0.010     | -0.015    | 0.033            | 0.033 | 0.023 | 0.027 |
| -0.47    | -0.30    | 0.99            | 0.99      | 0.010     | -0.010    | 0.032            | 0.032 | 0.023 | 0.025 |
| -0.40    | -0.30    | 1.00            | 1.00      | 0.010     | -0.013    | 0.032            | 0.032 | 0.025 | 0.028 |
| -0.35    | -0.30    | 1.01            | 1.01      | 0.008     | -0.008    | 0.033            | 0.033 | 0.025 | 0.027 |
| -0.30    | -0.30    | 1.00            | 1.00      | 0.008     | -0.012    | 0.033            | 0.033 | 0.023 | 0.025 |
| -0.25    | -0.30    | 1.00            | 1.00      | 0.010     | -0.012    | 0.035            | 0.035 | 0.022 | 0.028 |
| -0.20    | -0.30    | 1.00            | 1.00      | 0.013     | -0.010    | 0.033            | 0.033 | 0.025 | 0.025 |
| -0.15    | -0.30    | 0.99            | 0.99      | 0.010     | -0.012    | 0.033            | 0.033 | 0.028 | 0.030 |
| -0.10    | -0.30    | 0.99            | 0.99      | 0.008     | -0.008    | 0.033            | 0.033 | 0.025 | 0.025 |
| -0.05    | -0.30    | 0.98            | 0.98      | 0.008     | -0.005    | 0.033            | 0.033 | 0.023 | 0.027 |
| 0.00     | -0.30    | 0.98            | 0.98      | 0.007     | -0.005    | 0.032            | 0.032 | 0.023 | 0.023 |
| 0.10     | -0.30    | 0.99            | 0.99      | 0.005     | -0.012    | 0.028            | 0.028 | 0.022 | 0.027 |
| 0.20     | -0.30    | 1.01            | 1.01      | 0.005     | -0.010    | 0.032            | 0.032 | 0.022 | 0.027 |
| 0.30     | -0.30    | 1.01            | 1.01      | 0.003     | -0.005    | 0.030            | 0.030 | 0.020 | 0.045 |
| 0.40     | -0.30    | 1.00            | 1.00      | 0.005     | -0.008    | 0.032            | 0.033 | 0.022 | 0.027 |
| 0.50     | -0.30    | 1.00            | 1.00      | 0.005     | -0.007    | 0.033            | 0.033 | 0.023 | 0.025 |
| 0.60     | -0.30    | 1.00            | 1.00      | 0.002     | -0.012    | 0.032            | 0.032 | 0.025 | 0.027 |
| 0.70     | -0.30    | 1.00            | 1.00      | 0.007     | -0.012    | 0.030            | 0.030 | 0.027 | 0.025 |
| 0.80     | -0.30    | 0.99            | 0.99      | 0.007     | -0.012    | 0.032            | 0.032 | 0.023 | 0.025 |
| 0.80     | -0.40    | 0.99            | 0.99      | 0.005     | -0.017    | 0.032            | 0.032 | 0.025 | 0.028 |
| 0.75     | -0.40    | 1.00            | 1.00      | 0.000     | -0.017    | 0.030            | 0.030 | 0.025 | 0.027 |
| 0.70     | -0.40    | 1.00            | 0.99      | 0.007     | -0.013    | 0.033            | 0.033 | 0.025 | 0.028 |
| 0.65     | -0.40    | 1.00            | 1.00      | 0.003     | -0.015    | 0.032            | 0.033 | 0.025 | 0.025 |
| 0.60     | -0.40    | 1.00            | 1.00      | 0.003     | -0.015    | 0.033            | 0.033 | 0.025 | 0.028 |
| 0.55     | -0.40    | 0.99            | 0.99      | 0.002     | -0.012    | 0.033            | 0.035 | 0.027 | 0.027 |
| 0.50     | -0.40    | 1.00            | 1.00      | 0.002     | -0.008    | 0.032            | 0.032 | 0.025 | 0.023 |
| 0.45     | -0.40    | 0.98            | 0.98      | 0.000     | -0.017    | 0.032            | 0.032 | 0.023 | 0.030 |
| 0.40     | -0.40    | 0.99            | 0.99      | -0.002    | -0.013    | 0.033            | 0.033 | 0.023 | 0.025 |
| 0.30     | -0.40    | 0.99            | 0.99      | 0.005     | -0.010    | 0.030            | 0.030 | 0.023 | 0.023 |
| 0.20     | -0.40    | 1.01            | 1.01      | 0.002     | -0.005    | 0.037            | 0.037 | 0.025 | 0.025 |
| 0.10     | -0.40    | 1.00            | 1.00      | 0.010     | -0.008    | 0.030            | 0.030 | 0.023 | 0.025 |
| 0.00     | -0.40    | 1.01            | 1.01      | 0.005     | -0.008    | 0.037            | 0.037 | 0.023 | 0.028 |
| -0.05    | -0.40    | 1.00            | 1.00      | 0.007     | -0.008    | 0.033            | 0.035 | 0.023 | 0.028 |
| -0.10    | -0.40    | 1.00            | 1.00      | 0.007     | -0.008    | 0.033            | 0.035 | 0.025 | 0.028 |
| -0.15    | -0.40    | 1.00            | 1.00      | 0.008     | -0.007    | 0.030            | 0.030 | 0.022 | 0.025 |
| -0.20    | -0.40    | 1.00            | 1.00      | 0.003     | -0.010    | 0.033            | 0.033 | 0.027 | 0.027 |
| -0.25    | -0.40    | 1.01            | 1.00      | 0.007     | -0.010    | 0.035            | 0.035 | 0.025 | 0.028 |
| -0.30    | -0.40    | 1.00            | 1.00      | 0.008     | -0.010    | 0.035            | 0.035 | 0.023 | 0.025 |
| -0.35    | -0.40    | 1.00            | 1.00      | 0.010     | -0.013    | 0.033            | 0.035 | 0.023 | 0.028 |
| -0.40    | -0.40    | 1.00            | 0.99      | 0.005     | -0.012    | 0.037            | 0.037 | 0.023 | 0.025 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.45 | -0.40 | 1.01            | 1.01      | 0.008     | -0.012    | 0.037            | 0.037 | 0.023 | 0.027 |
| -0.50 | -0.40 | 0.99            | 0.99      | 0.007     | -0.013    | 0.033            | 0.033 | 0.023 | 0.025 |
| -0.55 | -0.40 | 1.00            | 1.00      | 0.003     | -0.012    | 0.033            | 0.033 | 0.025 | 0.025 |
| -0.60 | -0.40 | 1.00            | 1.00      | 0.007     | -0.010    | 0.033            | 0.035 | 0.023 | 0.028 |
| -0.65 | -0.40 | 0.99            | 0.99      | 0.005     | -0.008    | 0.035            | 0.035 | 0.025 | 0.023 |
| -0.70 | -0.40 | 1.02            | 1.02      | 0.010     | -0.015    | 0.035            | 0.035 | 0.023 | 0.029 |
| -0.75 | -0.40 | 1.01            | 1.01      | 0.005     | -0.008    | 0.034            | 0.034 | 0.022 | 0.025 |
| -0.75 | -0.50 | 1.01            | 1.01      | 0.003     | -0.015    | 0.035            | 0.035 | 0.022 | 0.030 |
| -0.70 | -0.50 | 1.00            | 1.00      | 0.008     | -0.008    | 0.034            | 0.035 | 0.023 | 0.030 |
| -0.65 | -0.50 | 1.01            | 1.01      | 0.010     | -0.010    | 0.035            | 0.035 | 0.023 | 0.025 |
| -0.60 | -0.50 | 1.00            | 1.00      | 0.007     | -0.010    | 0.039            | 0.039 | 0.023 | 0.029 |
| -0.55 | -0.50 | 1.01            | 1.01      | 0.007     | -0.010    | 0.032            | 0.032 | 0.023 | 0.027 |
| -0.50 | -0.50 | 1.00            | 1.00      | 0.008     | -0.010    | 0.037            | 0.037 | 0.025 | 0.025 |
| -0.45 | -0.50 | 1.01            | 1.01      | 0.007     | -0.015    | 0.037            | 0.037 | 0.022 | 0.032 |
| -0.40 | -0.50 | 1.00            | 1.00      | 0.008     | -0.010    | 0.037            | 0.037 | 0.022 | 0.025 |
| -0.35 | -0.50 | 0.99            | 0.99      | 0.010     | -0.010    | 0.034            | 0.034 | 0.022 | 0.025 |
| -0.30 | -0.50 | 1.00            | 1.00      | 0.007     | -0.008    | 0.034            | 0.034 | 0.023 | 0.025 |
| -0.25 | -0.50 | 1.00            | 1.00      | 0.008     | -0.010    | 0.035            | 0.035 | 0.022 | 0.029 |
| -0.20 | -0.50 | 1.00            | 1.00      | 0.007     | -0.012    | 0.035            | 0.035 | 0.022 | 0.029 |
| -0.15 | -0.50 | 1.01            | 1.01      | 0.002     | -0.012    | 0.034            | 0.034 | 0.023 | 0.029 |
| -0.10 | -0.50 | 0.99            | 0.99      | 0.005     | -0.007    | 0.035            | 0.035 | 0.023 | 0.025 |
| -0.05 | -0.50 | 0.98            | 0.98      | 0.003     | -0.012    | 0.037            | 0.037 | 0.023 | 0.027 |
| 0.00  | -0.50 | 1.01            | 1.01      | 0.002     | -0.010    | 0.035            | 0.035 | 0.023 | 0.030 |
| 0.10  | -0.50 | 0.99            | 0.99      | 0.000     | -0.010    | 0.034            | 0.034 | 0.022 | 0.029 |
| 0.20  | -0.50 | 0.99            | 0.99      | 0.003     | -0.010    | 0.035            | 0.035 | 0.023 | 0.029 |
| 0.30  | -0.50 | 1.01            | 1.01      | 0.002     | -0.008    | 0.032            | 0.032 | 0.023 | 0.023 |
| 0.40  | -0.50 | 0.99            | 0.99      | 0.000     | -0.012    | 0.035            | 0.037 | 0.023 | 0.027 |
| 0.45  | -0.50 | 0.99            | 0.99      | 0.002     | -0.013    | 0.035            | 0.035 | 0.023 | 0.029 |
| 0.50  | -0.50 | 0.99            | 0.99      | 0.003     | -0.015    | 0.034            | 0.034 | 0.022 | 0.030 |
| 0.55  | -0.50 | 0.99            | 0.99      | 0.002     | -0.012    | 0.032            | 0.032 | 0.022 | 0.025 |
| 0.60  | -0.50 | 1.00            | 1.00      | 0.003     | -0.012    | 0.037            | 0.037 | 0.023 | 0.029 |
| 0.65  | -0.50 | 1.00            | 1.00      | 0.003     | -0.012    | 0.034            | 0.034 | 0.023 | 0.025 |
| 0.70  | -0.50 | 1.00            | 1.00      | 0.003     | -0.010    | 0.034            | 0.034 | 0.025 | 0.025 |
| 0.75  | -0.50 | 1.00            | 1.00      | 0.003     | -0.010    | 0.034            | 0.034 | 0.023 | 0.029 |
| 0.80  | -0.50 | 1.01            | 1.01      | 0.003     | -0.010    | 0.034            | 0.034 | 0.025 | 0.027 |
| 0.80  | -0.60 | 1.00            | 1.00      | 0.000     | -0.007    | 0.034            | 0.034 | 0.025 | 0.025 |
| 0.75  | -0.60 | 1.00            | 1.00      | 0.003     | -0.008    | 0.035            | 0.035 | 0.023 | 0.025 |
| 0.70  | -0.60 | 1.01            | 1.01      | 0.000     | -0.008    | 0.032            | 0.034 | 0.029 | 0.025 |
| 0.65  | -0.60 | 1.00            | 1.00      | 0.000     | -0.008    | 0.035            | 0.035 | 0.023 | 0.027 |
| 0.60  | -0.60 | 1.01            | 1.01      | 0.002     | -0.013    | 0.039            | 0.039 | 0.027 | 0.027 |
| 0.55  | -0.60 | 1.01            | 1.01      | 0.000     | -0.008    | 0.037            | 0.037 | 0.027 | 0.027 |
| 0.50  | -0.60 | 0.99            | 0.99      | 0.007     | -0.012    | 0.034            | 0.034 | 0.025 | 0.025 |
| 0.45  | -0.60 | 1.00            | 1.00      | 0.000     | -0.012    | 0.032            | 0.032 | 0.025 | 0.025 |
| 0.40  | -0.60 | 1.00            | 1.00      | -0.002    | -0.003    | 0.035            | 0.035 | 0.023 | 0.023 |
| 0.30  | -0.60 | 1.01            | 1.01      | -0.003    | -0.012    | 0.032            | 0.032 | 0.022 | 0.027 |
| 0.20  | -0.60 | 1.00            | 1.00      | -0.002    | -0.008    | 0.030            | 0.030 | 0.022 | 0.025 |
| 0.10  | -0.60 | 0.99            | 0.99      | -0.002    | -0.007    | 0.034            | 0.035 | 0.027 | 0.027 |
| 0.00  | -0.60 | 0.99            | 0.99      | 0.000     | -0.007    | 0.035            | 0.035 | 0.025 | 0.027 |
| -0.05 | -0.60 | 1.00            | 1.00      | 0.000     | -0.002    | 0.039            | 0.041 | 0.026 | 0.021 |
| -0.10 | -0.60 | 1.00            | 1.00      | 0.000     | 0.000     | 0.038            | 0.038 | 0.025 | 0.020 |
| -0.15 | -0.60 | 0.99            | 0.99      | 0.002     | 0.000     | 0.036            | 0.036 | 0.026 | 0.021 |
| -0.20 | -0.60 | 1.00            | 1.00      | 0.003     | -0.002    | 0.038            | 0.038 | 0.026 | 0.018 |
| -0.25 | -0.60 | 1.00            | 1.00      | 0.000     | -0.002    | 0.039            | 0.039 | 0.028 | 0.018 |
| -0.30 | -0.60 | 1.00            | 1.00      | 0.000     | -0.002    | 0.036            | 0.038 | 0.028 | 0.018 |
| -0.35 | -0.60 | 1.00            | 0.99      | -0.002    | -0.002    | 0.039            | 0.039 | 0.025 | 0.021 |
| -0.40 | -0.60 | 1.00            | 1.00      | 0.000     | -0.002    | 0.036            | 0.036 | 0.026 | 0.021 |
| -0.45 | -0.60 | 1.01            | 1.01      | 0.000     | -0.003    | 0.038            | 0.038 | 0.030 | 0.018 |
| -0.50 | -0.60 | 1.01            | 1.01      | -0.007    | -0.002    | 0.041            | 0.041 | 0.028 | 0.020 |
| -0.55 | -0.60 | 1.00            | 1.00      | 0.000     | -0.005    | 0.036            | 0.036 | 0.026 | 0.020 |
| -0.60 | -0.60 | 1.00            | 1.00      | -0.005    | -0.002    | 0.039            | 0.039 | 0.028 | 0.020 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.65 | -0.60 | 1.00            | 1.00      | -0.002    | 0.000     | 0.030            | 0.030 | 0.023 | 0.018 |
| -0.70 | -0.60 | 1.01            | 1.01      | 0.002     | -0.002    | 0.033            | 0.033 | 0.023 | 0.018 |
| -0.75 | -0.60 | 1.01            | 1.01      | 0.005     | 0.000     | 0.031            | 0.031 | 0.026 | 0.020 |
| -0.80 | -0.60 | 1.01            | 1.01      | 0.007     | 0.002     | 0.036            | 0.036 | 0.025 | 0.020 |
| -0.80 | -0.70 | 1.01            | 1.01      | 0.008     | 0.007     | 0.030            | 0.030 | 0.023 | 0.020 |
| -0.75 | -0.70 | 1.01            | 1.01      | 0.008     | 0.003     | 0.030            | 0.030 | 0.023 | 0.018 |
| -0.70 | -0.70 | 1.00            | 1.00      | 0.005     | 0.002     | 0.033            | 0.033 | 0.025 | 0.020 |
| -0.65 | -0.70 | 1.00            | 1.00      | 0.007     | 0.000     | 0.031            | 0.031 | 0.023 | 0.021 |
| -0.60 | -0.70 | 1.00            | 1.00      | 0.002     | -0.002    | 0.033            | 0.033 | 0.023 | 0.018 |
| -0.55 | -0.70 | 1.01            | 1.01      | 0.002     | -0.003    | 0.028            | 0.028 | 0.025 | 0.016 |
| -0.50 | -0.70 | 0.99            | 0.99      | 0.002     | -0.003    | 0.033            | 0.033 | 0.021 | 0.021 |
| -0.45 | -0.70 | 1.00            | 1.00      | 0.007     | -0.005    | 0.036            | 0.036 | 0.023 | 0.020 |
| -0.40 | -0.70 | 1.01            | 1.01      | 0.000     | -0.002    | 0.036            | 0.036 | 0.023 | 0.021 |
| -0.35 | -0.70 | 1.01            | 1.01      | 0.003     | 0.000     | 0.033            | 0.033 | 0.023 | 0.020 |
| -0.30 | -0.70 | 0.99            | 0.99      | 0.005     | -0.002    | 0.034            | 0.034 | 0.025 | 0.020 |
| -0.25 | -0.70 | 1.00            | 0.99      | 0.002     | 0.002     | 0.036            | 0.036 | 0.023 | 0.020 |
| -0.20 | -0.70 | 0.98            | 0.98      | 0.000     | 0.002     | 0.036            | 0.036 | 0.023 | 0.015 |
| -0.15 | -0.70 | 0.98            | 0.98      | 0.003     | 0.000     | 0.031            | 0.031 | 0.026 | 0.016 |
| -0.10 | -0.70 | 1.00            | 1.00      | 0.003     | 0.002     | 0.036            | 0.036 | 0.023 | 0.018 |
| -0.05 | -0.70 | 1.00            | 1.00      | 0.000     | 0.003     | 0.034            | 0.034 | 0.023 | 0.016 |
| 0.00  | -0.70 | 0.99            | 0.99      | 0.002     | 0.000     | 0.034            | 0.034 | 0.023 | 0.016 |
| 0.10  | -0.70 | 0.98            | 0.98      | 0.003     | 0.000     | 0.036            | 0.036 | 0.023 | 0.016 |
| 0.20  | -0.70 | 0.99            | 0.99      | 0.002     | 0.002     | 0.036            | 0.036 | 0.025 | 0.016 |
| 0.30  | -0.70 | 1.01            | 1.01      | -0.005    | -0.003    | 0.026            | 0.026 | 0.023 | 0.025 |
| 0.40  | -0.70 | 0.99            | 0.99      | -0.005    | 0.003     | 0.036            | 0.036 | 0.023 | 0.026 |
| 0.45  | -0.70 | 0.98            | 0.98      | -0.010    | 0.002     | 0.036            | 0.036 | 0.025 | 0.021 |
| 0.50  | -0.70 | 0.99            | 0.99      | -0.005    | 0.000     | 0.037            | 0.039 | 0.026 | 0.023 |
| 0.55  | -0.70 | 0.99            | 0.99      | -0.013    | 0.000     | 0.038            | 0.038 | 0.024 | 0.021 |
| 0.60  | -0.70 | 0.99            | 0.99      | -0.008    | 0.003     | 0.036            | 0.036 | 0.031 | 0.020 |
| 0.65  | -0.70 | 0.99            | 0.99      | -0.010    | 0.003     | 0.038            | 0.038 | 0.026 | 0.021 |
| 0.70  | -0.70 | 1.00            | 1.00      | -0.005    | 0.007     | 0.038            | 0.038 | 0.023 | 0.017 |
| 0.75  | -0.70 | 1.01            | 1.01      | -0.005    | 0.007     | 0.036            | 0.036 | 0.028 | 0.017 |
| 0.80  | -0.70 | 1.00            | 1.00      | -0.003    | 0.003     | 0.031            | 0.031 | 0.031 | 0.017 |
| 0.80  | -0.80 | 1.00            | 1.00      | -0.008    | 0.008     | 0.031            | 0.031 | 0.025 | 0.018 |
| 0.75  | -0.80 | 1.00            | 1.00      | -0.007    | 0.007     | 0.036            | 0.036 | 0.025 | 0.020 |
| 0.70  | -0.80 | 1.00            | 1.00      | -0.005    | 0.003     | 0.036            | 0.036 | 0.026 | 0.018 |
| 0.65  | -0.80 | 1.00            | 1.00      | -0.005    | 0.002     | 0.033            | 0.033 | 0.025 | 0.020 |
| 0.60  | -0.80 | 1.00            | 1.00      | -0.008    | 0.002     | 0.031            | 0.031 | 0.026 | 0.018 |
| 0.55  | -0.80 | 1.00            | 1.00      | -0.012    | 0.003     | 0.038            | 0.038 | 0.040 | 0.018 |
| 0.50  | -0.80 | 1.00            | 1.00      | -0.013    | 0.000     | 0.038            | 0.038 | 0.050 | 0.018 |
| 0.45  | -0.80 | 1.00            | 1.00      | -0.007    | 0.000     | 0.036            | 0.036 | 0.028 | 0.017 |
| 0.40  | -0.80 | 1.00            | 1.00      | 0.000     | 0.000     | 0.031            | 0.031 | 0.025 | 0.017 |
| 0.30  | -0.80 | 1.01            | 1.01      | 0.005     | -0.002    | 0.031            | 0.031 | 0.025 | 0.028 |
| 0.20  | -0.80 | 0.99            | 0.99      | 0.002     | -0.002    | 0.033            | 0.033 | 0.025 | 0.018 |
| 0.10  | -0.80 | 0.99            | 0.99      | 0.005     | 0.000     | 0.033            | 0.035 | 0.026 | 0.017 |
| 0.00  | -0.80 | 1.00            | 1.00      | 0.003     | 0.000     | 0.031            | 0.031 | 0.027 | 0.020 |
| -0.05 | -0.80 | 1.00            | 1.00      | 0.007     | -0.002    | 0.036            | 0.036 | 0.023 | 0.022 |
| -0.10 | -0.80 | 1.00            | 1.00      | 0.005     | 0.002     | 0.031            | 0.031 | 0.026 | 0.017 |
| -0.15 | -0.80 | 1.01            | 1.01      | 0.005     | -0.002    | 0.030            | 0.030 | 0.025 | 0.022 |
| -0.20 | -0.80 | 1.01            | 1.01      | 0.005     | 0.000     | 0.031            | 0.031 | 0.025 | 0.018 |
| -0.25 | -0.80 | 1.01            | 1.01      | 0.007     | -0.002    | 0.033            | 0.033 | 0.023 | 0.018 |
| -0.30 | -0.80 | 1.01            | 1.01      | 0.008     | 0.000     | 0.030            | 0.031 | 0.025 | 0.017 |
| -0.35 | -0.80 | 1.01            | 1.01      | 0.003     | 0.000     | 0.031            | 0.031 | 0.026 | 0.017 |
| -0.40 | -0.80 | 1.00            | 1.00      | 0.005     | -0.002    | 0.033            | 0.033 | 0.028 | 0.020 |
| -0.45 | -0.80 | 1.01            | 1.01      | 0.010     | -0.002    | 0.028            | 0.028 | 0.023 | 0.020 |
| -0.50 | -0.80 | 1.01            | 1.01      | 0.003     | -0.002    | 0.030            | 0.030 | 0.028 | 0.017 |
| -0.55 | -0.80 | 1.00            | 1.00      | 0.005     | -0.003    | 0.031            | 0.031 | 0.023 | 0.017 |
| -0.60 | -0.80 | 1.01            | 1.01      | 0.008     | -0.002    | 0.030            | 0.030 | 0.030 | 0.018 |
| -0.65 | -0.80 | 1.01            | 1.01      | 0.007     | 0.000     | 0.028            | 0.028 | 0.023 | 0.017 |
| -0.70 | -0.80 | 1.01            | 1.01      | 0.003     | 0.002     | 0.030            | 0.030 | 0.023 | 0.017 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.75    | -0.80    | 1.01            | 1.01      | 0.008     | 0.002     | 0.031      | 0.031 | 0.025 | 0.018 |
| -0.80    | -0.80    | 0.92            | 0.92      | 0.013     | 0.007     | 0.086      | 0.086 | 0.028 | 0.022 |
| 0.70     | 0.00     | 1.01            | 1.01      | 0.003     | -0.002    | 0.032      | 0.032 | 0.025 | 0.018 |
| 0.60     | 0.00     | 1.00            | 1.00      | 0.002     | 0.000     | 0.033      | 0.033 | 0.023 | 0.022 |
| 0.50     | 0.00     | 0.99            | 0.99      | 0.002     | 0.002     | 0.033      | 0.033 | 0.023 | 0.015 |
| 0.40     | 0.00     | 1.00            | 1.00      | -0.002    | 0.005     | 0.030      | 0.030 | 0.027 | 0.017 |
| 0.30     | 0.00     | 1.02            | 1.02      | -0.003    | 0.008     | 0.030      | 0.030 | 0.027 | 0.020 |
| 0.20     | 0.00     | 1.00            | 1.00      | -0.002    | 0.007     | 0.037      | 0.037 | 0.023 | 0.017 |
| 0.10     | 0.00     | 1.01            | 1.01      | 0.000     | 0.007     | 0.030      | 0.030 | 0.023 | 0.017 |
| 0.00     | 0.00     | 1.00            | 1.00      | -0.002    | 0.002     | 0.032      | 0.032 | 0.023 | 0.018 |
| -0.05    | 0.00     | 1.00            | 0.99      | -0.002    | 0.000     | 0.030      | 0.030 | 0.023 | 0.018 |
| -0.10    | 0.00     | 1.00            | 1.00      | -0.003    | 0.003     | 0.030      | 0.030 | 0.027 | 0.017 |
| -0.15    | 0.00     | 1.00            | 1.00      | -0.003    | 0.002     | 0.035      | 0.035 | 0.025 | 0.022 |
| -0.20    | 0.00     | 1.01            | 1.01      | 0.000     | 0.000     | 0.030      | 0.030 | 0.022 | 0.017 |
| -0.25    | 0.00     | 1.01            | 1.01      | -0.002    | 0.003     | 0.032      | 0.032 | 0.023 | 0.020 |
| -0.30    | 0.00     | 1.00            | 1.00      | 0.000     | 0.002     | 0.028      | 0.028 | 0.023 | 0.017 |
| -0.35    | 0.00     | 1.00            | 1.00      | -0.003    | 0.002     | 0.033      | 0.035 | 0.025 | 0.017 |
| -0.40    | 0.00     | 1.00            | 1.00      | -0.002    | 0.000     | 0.030      | 0.030 | 0.025 | 0.017 |
| -0.45    | 0.00     | 1.01            | 1.01      | 0.003     | 0.000     | 0.033      | 0.033 | 0.025 | 0.017 |
| -0.50    | 0.00     | 1.01            | 1.01      | 0.002     | -0.002    | 0.032      | 0.032 | 0.025 | 0.017 |
| -0.55    | 0.00     | 1.01            | 1.01      | 0.002     | -0.002    | 0.031      | 0.031 | 0.025 | 0.017 |
| -0.60    | 0.00     | 1.01            | 1.01      | 0.007     | -0.005    | 0.032      | 0.032 | 0.025 | 0.020 |
| -0.65    | 0.00     | 1.02            | 1.02      | 0.005     | -0.005    | 0.030      | 0.030 | 0.028 | 0.020 |
| -0.70    | 0.00     | 1.01            | 1.01      | 0.007     | -0.002    | 0.028      | 0.028 | 0.025 | 0.017 |
| -0.75    | 0.00     | 1.01            | 1.00      | 0.003     | -0.007    | 0.030      | 0.030 | 0.025 | 0.017 |
| -0.80    | 0.00     | 1.00            | 1.00      | 0.005     | -0.005    | 0.030      | 0.030 | 0.023 | 0.018 |
| -0.80    | 0.10     | 1.01            | 1.01      | 0.002     | -0.002    | 0.028      | 0.030 | 0.025 | 0.018 |
| -0.75    | 0.10     | 1.01            | 1.01      | 0.003     | -0.003    | 0.032      | 0.032 | 0.025 | 0.018 |
| -0.70    | 0.10     | 1.01            | 1.01      | 0.002     | -0.003    | 0.032      | 0.032 | 0.027 | 0.017 |
| -0.65    | 0.10     | 1.01            | 1.01      | 0.002     | -0.002    | 0.030      | 0.030 | 0.023 | 0.017 |
| -0.60    | 0.10     | 1.01            | 1.01      | 0.005     | 0.000     | 0.030      | 0.030 | 0.023 | 0.015 |
| -0.55    | 0.10     | 1.01            | 1.01      | 0.005     | -0.003    | 0.033      | 0.033 | 0.025 | 0.018 |
| -0.50    | 0.10     | 1.01            | 1.01      | 0.002     | -0.003    | 0.032      | 0.032 | 0.025 | 0.022 |
| -0.45    | 0.10     | 0.99            | 0.99      | 0.000     | 0.000     | 0.032      | 0.032 | 0.023 | 0.017 |
| -0.40    | 0.10     | 0.99            | 0.99      | -0.003    | 0.000     | 0.032      | 0.032 | 0.023 | 0.020 |
| -0.35    | 0.10     | 1.00            | 1.00      | -0.002    | 0.000     | 0.032      | 0.032 | 0.025 | 0.017 |
| -0.30    | 0.10     | 0.99            | 0.99      | 0.000     | 0.002     | 0.033      | 0.033 | 0.023 | 0.018 |
| -0.25    | 0.10     | 0.99            | 0.99      | -0.005    | 0.002     | 0.033      | 0.033 | 0.025 | 0.017 |
| -0.20    | 0.10     | 1.00            | 1.00      | 0.000     | 0.000     | 0.032      | 0.032 | 0.022 | 0.020 |
| -0.15    | 0.10     | 1.00            | 1.00      | -0.003    | 0.002     | 0.032      | 0.032 | 0.023 | 0.015 |
| -0.10    | 0.10     | 1.01            | 1.01      | 0.000     | 0.002     | 0.037      | 0.037 | 0.025 | 0.017 |
| -0.05    | 0.10     | 0.99            | 0.99      | 0.000     | 0.002     | 0.032      | 0.032 | 0.027 | 0.017 |
| 0.00     | 0.10     | 1.01            | 1.01      | -0.002    | 0.003     | 0.028      | 0.028 | 0.023 | 0.015 |
| 0.10     | 0.10     | 1.00            | 1.00      | -0.005    | 0.003     | 0.030      | 0.030 | 0.025 | 0.020 |
| 0.20     | 0.10     | 1.00            | 1.00      | 0.003     | 0.002     | 0.028      | 0.028 | 0.020 | 0.017 |
| 0.30     | 0.10     | 1.01            | 1.01      | 0.002     | 0.003     | 0.027      | 0.027 | 0.025 | 0.015 |
| 0.40     | 0.10     | 1.01            | 1.01      | 0.002     | 0.005     | 0.033      | 0.033 | 0.027 | 0.020 |
| 0.50     | 0.10     | 1.00            | 1.00      | 0.007     | 0.005     | 0.035      | 0.035 | 0.023 | 0.018 |
| 0.60     | 0.10     | 1.01            | 1.01      | 0.007     | 0.000     | 0.032      | 0.032 | 0.023 | 0.018 |
| 0.70     | 0.10     | 1.00            | 1.00      | 0.002     | 0.000     | 0.030      | 0.030 | 0.027 | 0.017 |
| 0.80     | 0.10     | 1.00            | 1.00      | -0.002    | -0.005    | 0.035      | 0.035 | 0.025 | 0.018 |
| 0.80     | 0.20     | 1.00            | 1.00      | 0.000     | -0.003    | 0.032      | 0.032 | 0.023 | 0.018 |
| 0.70     | 0.20     | 0.99            | 0.99      | 0.002     | -0.003    | 0.030      | 0.030 | 0.022 | 0.018 |
| 0.60     | 0.20     | 1.00            | 1.00      | 0.005     | 0.000     | 0.033      | 0.033 | 0.025 | 0.017 |
| 0.50     | 0.20     | 1.00            | 1.00      | 0.003     | 0.002     | 0.033      | 0.033 | 0.022 | 0.020 |
| 0.40     | 0.20     | 1.00            | 1.00      | 0.000     | 0.002     | 0.033      | 0.033 | 0.025 | 0.018 |
| 0.30     | 0.20     | 1.00            | 1.00      | 0.003     | 0.007     | 0.032      | 0.032 | 0.023 | 0.017 |
| 0.20     | 0.20     | 0.99            | 0.99      | 0.000     | 0.003     | 0.032      | 0.032 | 0.025 | 0.018 |
| 0.10     | 0.20     | 0.98            | 0.98      | -0.002    | 0.005     | 0.030      | 0.030 | 0.022 | 0.018 |
| 0.00     | 0.20     | 0.99            | 0.99      | -0.002    | 0.005     | 0.032      | 0.032 | 0.028 | 0.017 |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.05 | 0.20 | 0.99            | 0.99      | 0.002     | 0.003     | 0.037      | 0.037 | 0.025 | 0.020 |
| -0.10 | 0.20 | 0.99            | 0.99      | -0.003    | 0.007     | 0.032      | 0.032 | 0.025 | 0.015 |
| -0.15 | 0.20 | 0.99            | 0.99      | 0.000     | 0.002     | 0.032      | 0.032 | 0.027 | 0.018 |
| -0.20 | 0.20 | 1.00            | 1.00      | -0.003    | 0.002     | 0.037      | 0.037 | 0.027 | 0.020 |
| -0.25 | 0.20 | 1.01            | 1.00      | -0.002    | 0.003     | 0.033      | 0.033 | 0.027 | 0.020 |
| -0.30 | 0.20 | 1.01            | 1.01      | -0.003    | 0.000     | 0.035      | 0.035 | 0.025 | 0.022 |
| -0.35 | 0.20 | 0.99            | 0.99      | -0.005    | 0.002     | 0.035      | 0.035 | 0.025 | 0.015 |
| -0.40 | 0.20 | 1.00            | 1.00      | 0.002     | 0.002     | 0.027      | 0.027 | 0.025 | 0.017 |
| -0.45 | 0.20 | 1.00            | 1.00      | 0.003     | 0.003     | 0.030      | 0.030 | 0.025 | 0.017 |
| -0.50 | 0.20 | 1.00            | 1.00      | 0.005     | 0.000     | 0.030      | 0.030 | 0.027 | 0.017 |
| -0.55 | 0.20 | 1.00            | 1.00      | 0.003     | 0.002     | 0.033      | 0.033 | 0.027 | 0.018 |
| -0.60 | 0.20 | 1.00            | 1.00      | 0.005     | -0.002    | 0.028      | 0.028 | 0.025 | 0.018 |
| -0.65 | 0.20 | 1.00            | 1.00      | 0.007     | 0.000     | 0.030      | 0.030 | 0.025 | 0.017 |
| -0.70 | 0.20 | 1.01            | 1.01      | 0.005     | -0.003    | 0.030      | 0.030 | 0.027 | 0.010 |
| -0.75 | 0.20 | 1.01            | 1.00      | 0.003     | -0.007    | 0.028      | 0.028 | 0.025 | 0.017 |
| -0.80 | 0.20 | 0.99            | 0.97      | 0.005     | -0.010    | 0.028      | 0.028 | 0.027 | 0.022 |
| -0.80 | 0.30 | 1.00            | 1.00      | 0.007     | -0.008    | 0.032      | 0.032 | 0.023 | 0.017 |
| -0.75 | 0.30 | 1.01            | 1.01      | 0.000     | 0.000     | 0.030      | 0.030 | 0.025 | 0.017 |
| -0.70 | 0.30 | 1.00            | 1.00      | 0.003     | -0.007    | 0.032      | 0.032 | 0.025 | 0.018 |
| -0.65 | 0.30 | 1.00            | 1.00      | 0.005     | 0.000     | 0.030      | 0.030 | 0.028 | 0.015 |
| -0.60 | 0.30 | 1.00            | 1.00      | 0.005     | 0.000     | 0.028      | 0.028 | 0.025 | 0.018 |
| -0.55 | 0.30 | 1.00            | 1.00      | 0.007     | 0.002     | 0.028      | 0.028 | 0.025 | 0.017 |
| -0.50 | 0.30 | 1.00            | 1.00      | 0.002     | 0.003     | 0.030      | 0.030 | 0.025 | 0.017 |
| -0.47 | 0.30 | 1.00            | 1.00      | 0.005     | 0.002     | 0.032      | 0.032 | 0.025 | 0.017 |
| -0.40 | 0.30 | 1.02            | 1.02      | -0.003    | 0.000     | 0.032      | 0.032 | 0.027 | 0.020 |
| -0.35 | 0.30 | 1.02            | 1.02      | 0.000     | 0.002     | 0.030      | 0.030 | 0.024 | 0.020 |
| -0.30 | 0.30 | 1.00            | 1.00      | 0.000     | 0.003     | 0.035      | 0.035 | 0.024 | 0.018 |
| -0.25 | 0.30 | 0.99            | 0.99      | -0.003    | 0.002     | 0.040      | 0.040 | 0.024 | 0.018 |
| -0.20 | 0.30 | 1.01            | 1.01      | -0.005    | 0.005     | 0.032      | 0.032 | 0.025 | 0.020 |
| -0.15 | 0.30 | 1.02            | 1.02      | -0.002    | 0.005     | 0.034      | 0.034 | 0.024 | 0.018 |
| -0.10 | 0.30 | 1.01            | 1.01      | 0.000     | 0.005     | 0.035      | 0.035 | 0.024 | 0.022 |
| -0.05 | 0.30 | 0.98            | 0.98      | -0.003    | 0.007     | 0.034      | 0.034 | 0.022 | 0.020 |
| 0.00  | 0.30 | 1.01            | 1.01      | 0.000     | 0.003     | 0.034      | 0.034 | 0.022 | 0.020 |
| 0.10  | 0.30 | 1.00            | 1.00      | 0.000     | 0.007     | 0.032      | 0.032 | 0.024 | 0.017 |
| 0.20  | 0.30 | 1.00            | 1.00      | 0.000     | 0.003     | 0.030      | 0.030 | 0.022 | 0.018 |
| 0.30  | 0.30 | 1.03            | 1.02      | -0.005    | 0.012     | 0.027      | 0.027 | 0.024 | 0.027 |
| 0.40  | 0.30 | 1.01            | 1.01      | -0.003    | 0.003     | 0.034      | 0.034 | 0.024 | 0.020 |
| 0.50  | 0.30 | 1.01            | 1.01      | -0.002    | 0.005     | 0.034      | 0.032 | 0.024 | 0.015 |
| 0.60  | 0.30 | 1.02            | 1.02      | 0.002     | 0.000     | 0.034      | 0.034 | 0.024 | 0.018 |
| 0.70  | 0.30 | 1.02            | 1.02      | 0.003     | -0.002    | 0.034      | 0.034 | 0.025 | 0.017 |
| 0.80  | 0.30 | 1.02            | 1.02      | -0.002    | -0.003    | 0.032      | 0.032 | 0.025 | 0.020 |
| 0.80  | 0.40 | 1.07            | 1.07      | -0.002    | -0.008    | 0.034      | 0.034 | 0.024 | 0.020 |
| 0.75  | 0.40 | 1.02            | 1.01      | 0.005     | -0.002    | 0.034      | 0.034 | 0.025 | 0.017 |
| 0.70  | 0.40 | 1.01            | 1.01      | 0.008     | -0.003    | 0.030      | 0.030 | 0.025 | 0.018 |
| 0.65  | 0.40 | 1.01            | 1.01      | 0.005     | -0.003    | 0.029      | 0.029 | 0.025 | 0.022 |
| 0.60  | 0.40 | 1.01            | 1.01      | 0.007     | -0.002    | 0.027      | 0.027 | 0.025 | 0.020 |
| 0.55  | 0.40 | 1.03            | 1.03      | 0.003     | -0.002    | 0.030      | 0.030 | 0.024 | 0.022 |
| 0.50  | 0.40 | 1.01            | 1.01      | 0.003     | -0.005    | 0.030      | 0.030 | 0.025 | 0.022 |
| 0.45  | 0.40 | 0.97            | 0.97      | -0.002    | 0.002     | 0.030      | 0.030 | 0.022 | 0.017 |
| 0.40  | 0.40 | 0.96            | 0.96      | 0.000     | 0.003     | 0.042      | 0.042 | 0.024 | 0.017 |
| 0.30  | 0.40 | 1.01            | 1.01      | 0.000     | 0.008     | 0.029      | 0.029 | 0.020 | 0.017 |
| 0.20  | 0.40 | 1.02            | 1.02      | -0.002    | 0.000     | 0.035      | 0.035 | 0.024 | 0.018 |
| 0.10  | 0.40 | 1.00            | 1.00      | -0.002    | 0.007     | 0.030      | 0.030 | 0.027 | 0.017 |
| 0.00  | 0.40 | 1.01            | 1.01      | 0.000     | 0.007     | 0.034      | 0.034 | 0.025 | 0.017 |
| -0.05 | 0.40 | 1.02            | 1.02      | 0.002     | 0.005     | 0.035      | 0.035 | 0.022 | 0.020 |
| -0.10 | 0.40 | 1.02            | 1.02      | 0.005     | 0.002     | 0.042      | 0.042 | 0.024 | 0.022 |
| -0.15 | 0.40 | 1.02            | 1.02      | 0.000     | 0.005     | 0.035      | 0.035 | 0.024 | 0.022 |
| -0.20 | 0.40 | 1.01            | 1.01      | 0.002     | 0.003     | 0.034      | 0.035 | 0.024 | 0.022 |
| -0.25 | 0.40 | 1.02            | 1.02      | -0.003    | 0.005     | 0.030      | 0.030 | 0.025 | 0.018 |
| -0.30 | 0.40 | 1.01            | 1.01      | -0.002    | 0.002     | 0.034      | 0.034 | 0.024 | 0.020 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $\bar{u}'$ | $\bar{v}'$ | $\bar{w}'$ |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|------------|------------|------------|
| -0.35    | 0.40     | 1.01            | 1.01      | 0.002     | 0.002     | 0.032            | 0.032      | 0.024      | 0.020      |
| -0.40    | 0.40     | 1.01            | 1.01      | 0.005     | 0.003     | 0.032            | 0.032      | 0.027      | 0.022      |
| -0.45    | 0.40     | 1.00            | 1.00      | 0.007     | -0.002    | 0.030            | 0.030      | 0.024      | 0.022      |
| -0.50    | 0.40     | 1.00            | 1.00      | 0.000     | 0.000     | 0.035            | 0.035      | 0.027      | 0.020      |
| -0.55    | 0.40     | 1.02            | 1.02      | 0.003     | 0.003     | 0.035            | 0.035      | 0.025      | 0.020      |
| -0.60    | 0.40     | 1.01            | 1.01      | 0.003     | -0.002    | 0.029            | 0.029      | 0.027      | 0.018      |
| -0.65    | 0.40     | 1.01            | 1.01      | 0.003     | -0.005    | 0.034            | 0.034      | 0.027      | 0.020      |
| -0.70    | 0.40     | 1.01            | 1.01      | 0.005     | -0.005    | 0.032            | 0.032      | 0.025      | 0.018      |
| -0.75    | 0.40     | 1.01            | 1.01      | 0.000     | -0.010    | 0.034            | 0.034      | 0.027      | 0.022      |
| -0.80    | 0.40     | 1.02            | 1.01      | 0.002     | -0.010    | 0.032            | 0.032      | 0.025      | 0.025      |
| -0.80    | 0.50     | 1.00            | 1.00      | 0.000     | -0.012    | 0.032            | 0.032      | 0.025      | 0.022      |
| -0.75    | 0.50     | 1.02            | 1.02      | 0.005     | -0.012    | 0.034            | 0.034      | 0.025      | 0.022      |
| -0.70    | 0.50     | 1.02            | 1.02      | 0.002     | -0.003    | 0.034            | 0.034      | 0.024      | 0.020      |
| -0.65    | 0.50     | 1.01            | 1.01      | 0.008     | -0.003    | 0.034            | 0.034      | 0.025      | 0.020      |
| -0.60    | 0.50     | 1.01            | 1.01      | 0.007     | 0.000     | 0.034            | 0.034      | 0.027      | 0.018      |
| -0.55    | 0.50     | 1.01            | 1.01      | 0.007     | 0.000     | 0.030            | 0.030      | 0.027      | 0.018      |
| -0.50    | 0.50     | 1.01            | 1.01      | 0.005     | -0.002    | 0.032            | 0.032      | 0.025      | 0.018      |
| -0.45    | 0.50     | 1.01            | 1.01      | 0.003     | -0.003    | 0.032            | 0.032      | 0.027      | 0.022      |
| -0.40    | 0.50     | 1.01            | 1.01      | 0.005     | -0.003    | 0.034            | 0.034      | 0.025      | 0.020      |
| -0.35    | 0.50     | 1.01            | 1.01      | 0.000     | 0.000     | 0.032            | 0.032      | 0.024      | 0.025      |
| -0.30    | 0.50     | 1.02            | 1.02      | 0.002     | -0.002    | 0.042            | 0.042      | 0.022      | 0.020      |
| -0.25    | 0.50     | 1.01            | 1.01      | -0.003    | 0.000     | 0.035            | 0.035      | 0.024      | 0.022      |
| -0.20    | 0.50     | 0.99            | 0.98      | 0.003     | 0.002     | 0.034            | 0.034      | 0.024      | 0.020      |
| -0.15    | 0.50     | 1.01            | 1.01      | 0.000     | -0.007    | 0.032            | 0.032      | 0.025      | 0.022      |
| -0.10    | 0.50     | 1.00            | 1.00      | 0.000     | 0.002     | 0.035            | 0.035      | 0.025      | 0.020      |
| -0.05    | 0.50     | 0.99            | 0.99      | 0.003     | 0.003     | 0.034            | 0.034      | 0.024      | 0.022      |
| 0.00     | 0.50     | 1.00            | 1.00      | -0.002    | 0.003     | 0.032            | 0.032      | 0.024      | 0.020      |
| 0.10     | 0.50     | 1.00            | 1.00      | 0.000     | 0.003     | 0.035            | 0.035      | 0.022      | 0.020      |
| 0.20     | 0.50     | 1.00            | 1.00      | 0.007     | 0.003     | 0.032            | 0.032      | 0.024      | 0.017      |
| 0.30     | 0.50     | 0.98            | 0.98      | 0.002     | 0.000     | 0.032            | 0.032      | 0.025      | 0.020      |
| 0.40     | 0.50     | 1.01            | 1.00      | 0.000     | -0.003    | 0.035            | 0.035      | 0.022      | 0.022      |
| 0.45     | 0.50     | 0.98            | 0.98      | 0.000     | -0.005    | 0.042            | 0.042      | 0.024      | 0.020      |
| 0.50     | 0.50     | 1.00            | 1.00      | 0.003     | -0.005    | 0.042            | 0.042      | 0.022      | 0.020      |
| 0.55     | 0.50     | 1.01            | 1.00      | 0.003     | -0.007    | 0.037            | 0.037      | 0.027      | 0.020      |
| 0.60     | 0.50     | 0.99            | 0.99      | 0.002     | -0.005    | 0.037            | 0.037      | 0.027      | 0.017      |
| 0.65     | 0.50     | 0.99            | 0.99      | 0.007     | -0.002    | 0.045            | 0.045      | 0.025      | 0.020      |
| 0.70     | 0.50     | 0.97            | 0.97      | 0.013     | -0.002    | 0.052            | 0.052      | 0.025      | 0.018      |
| 0.75     | 0.50     | 0.94            | 0.94      | 0.005     | -0.010    | 0.044            | 0.044      | 0.022      | 0.017      |
| 0.80     | 0.50     | 0.94            | 0.94      | -0.012    | -0.013    | 0.034            | 0.034      | 0.040      | 0.017      |
| 0.80     | 0.60     | 0.95            | 0.95      | 0.002     | -0.017    | 0.029            | 0.029      | 0.029      | 0.018      |
| 0.75     | 0.60     | 0.96            | 0.96      | 0.007     | -0.012    | 0.030            | 0.030      | 0.027      | 0.018      |
| 0.70     | 0.60     | 0.95            | 0.95      | 0.005     | -0.012    | 0.029            | 0.029      | 0.029      | 0.017      |
| 0.65     | 0.60     | 0.95            | 0.95      | 0.003     | -0.012    | 0.032            | 0.032      | 0.024      | 0.017      |
| 0.60     | 0.60     | 0.94            | 0.93      | 0.002     | -0.013    | 0.034            | 0.034      | 0.024      | 0.018      |
| 0.55     | 0.60     | 0.92            | 0.92      | -0.002    | -0.012    | 0.030            | 0.030      | 0.025      | 0.017      |
| 0.50     | 0.60     | 0.94            | 0.94      | -0.003    | -0.013    | 0.032            | 0.032      | 0.030      | 0.017      |
| 0.45     | 0.60     | 0.93            | 0.93      | 0.000     | -0.010    | 0.035            | 0.035      | 0.030      | 0.017      |
| 0.40     | 0.60     | 0.93            | 0.93      | -0.002    | -0.007    | 0.034            | 0.034      | 0.027      | 0.018      |
| 0.30     | 0.60     | 0.98            | 0.98      | -0.003    | -0.007    | 0.044            | 0.044      | 0.027      | 0.017      |
| 0.20     | 0.60     | 0.98            | 0.98      | -0.005    | 0.000     | 0.034            | 0.034      | 0.032      | 0.017      |
| 0.10     | 0.60     | 1.01            | 1.00      | -0.005    | 0.000     | 0.029            | 0.029      | 0.032      | 0.024      |
| 0.00     | 0.60     | 1.00            | 1.00      | 0.002     | 0.010     | 0.047            | 0.047      | 0.029      | 0.022      |
| -0.05    | 0.60     | 1.01            | 1.01      | 0.003     | 0.003     | 0.030            | 0.030      | 0.024      | 0.022      |
| -0.10    | 0.60     | 1.00            | 1.00      | 0.007     | -0.003    | 0.030            | 0.030      | 0.022      | 0.024      |
| -0.15    | 0.60     | 1.01            | 1.01      | 0.000     | -0.003    | 0.035            | 0.035      | 0.027      | 0.025      |
| -0.20    | 0.60     | 0.99            | 0.99      | 0.000     | 0.003     | 0.029            | 0.029      | 0.025      | 0.020      |
| -0.25    | 0.60     | 0.98            | 0.98      | -0.002    | -0.002    | 0.029            | 0.029      | 0.024      | 0.022      |
| -0.30    | 0.60     | 0.97            | 0.97      | -0.002    | 0.000     | 0.030            | 0.030      | 0.027      | 0.024      |
| -0.35    | 0.60     | 1.01            | 1.01      | -0.002    | -0.003    | 0.032            | 0.032      | 0.024      | 0.027      |
| -0.40    | 0.60     | 1.01            | 1.01      | 0.003     | -0.003    | 0.032            | 0.032      | 0.029      | 0.027      |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.45 | 0.60 | 0.98            | 0.98      | -0.002    | -0.002    | 0.034            | 0.034 | 0.024 | 0.024 |
| -0.50 | 0.60 | 1.01            | 1.01      | 0.000     | -0.007    | 0.029            | 0.029 | 0.022 | 0.025 |
| -0.55 | 0.60 | 0.99            | 0.99      | 0.002     | -0.003    | 0.035            | 0.035 | 0.024 | 0.022 |
| -0.60 | 0.60 | 1.01            | 1.01      | 0.000     | -0.005    | 0.037            | 0.037 | 0.024 | 0.025 |
| -0.65 | 0.60 | 0.99            | 0.99      | 0.003     | -0.007    | 0.040            | 0.040 | 0.025 | 0.024 |
| -0.70 | 0.60 | 1.05            | 1.05      | 0.003     | -0.008    | 0.039            | 0.039 | 0.024 | 0.025 |
| -0.75 | 0.60 | 0.99            | 0.99      | 0.000     | -0.008    | 0.032            | 0.032 | 0.025 | 0.025 |
| -0.80 | 0.60 | 0.99            | 0.99      | 0.002     | -0.008    | 0.032            | 0.032 | 0.025 | 0.024 |
| -0.80 | 0.70 | 1.01            | 1.01      | 0.002     | -0.010    | 0.027            | 0.029 | 0.025 | 0.025 |
| -0.75 | 0.70 | 1.01            | 1.01      | 0.000     | -0.008    | 0.035            | 0.035 | 0.025 | 0.025 |
| -0.70 | 0.70 | 1.00            | 1.00      | 0.000     | -0.003    | 0.034            | 0.034 | 0.022 | 0.022 |
| -0.65 | 0.70 | 1.02            | 1.02      | 0.007     | -0.002    | 0.030            | 0.030 | 0.022 | 0.025 |
| -0.60 | 0.70 | 1.01            | 1.01      | -0.002    | -0.007    | 0.027            | 0.027 | 0.025 | 0.025 |
| -0.55 | 0.70 | 1.01            | 1.01      | 0.003     | -0.007    | 0.032            | 0.032 | 0.024 | 0.025 |
| -0.50 | 0.70 | 1.01            | 1.01      | -0.002    | 0.000     | 0.034            | 0.034 | 0.024 | 0.024 |
| -0.45 | 0.70 | 1.02            | 1.02      | 0.000     | 0.002     | 0.037            | 0.037 | 0.025 | 0.025 |
| -0.40 | 0.70 | 0.99            | 0.98      | 0.000     | 0.000     | 0.030            | 0.030 | 0.022 | 0.022 |
| -0.35 | 0.70 | 0.99            | 0.99      | -0.002    | 0.002     | 0.032            | 0.032 | 0.022 | 0.024 |
| -0.30 | 0.70 | 1.00            | 1.00      | -0.002    | -0.002    | 0.027            | 0.027 | 0.022 | 0.025 |
| -0.25 | 0.70 | 0.99            | 0.99      | 0.000     | -0.005    | 0.029            | 0.029 | 0.027 | 0.024 |
| -0.20 | 0.70 | 1.01            | 1.01      | 0.002     | -0.003    | 0.027            | 0.027 | 0.025 | 0.022 |
| -0.15 | 0.70 | 1.01            | 1.01      | 0.000     | -0.005    | 0.035            | 0.035 | 0.022 | 0.021 |
| -0.10 | 0.70 | 1.01            | 1.01      | 0.000     | 0.002     | 0.034            | 0.034 | 0.027 | 0.018 |
| -0.05 | 0.70 | 0.97            | 0.96      | 0.000     | 0.005     | 0.037            | 0.037 | 0.025 | 0.018 |
| 0.00  | 0.70 | 0.91            | 0.91      | -0.002    | 0.010     | 0.049            | 0.049 | 0.025 | 0.020 |
| 0.10  | 0.70 | 0.92            | 0.91      | -0.003    | 0.024     | 0.034            | 0.034 | 0.024 | 0.017 |
| 0.20  | 0.70 | 0.93            | 0.93      | 0.000     | -0.002    | 0.029            | 0.029 | 0.022 | 0.015 |
| 0.30  | 0.70 | 0.93            | 0.93      | 0.000     | 0.000     | 0.030            | 0.030 | 0.022 | 0.012 |
| 0.40  | 0.70 | 0.95            | 0.95      | 0.000     | -0.003    | 0.032            | 0.032 | 0.022 | 0.013 |
| 0.45  | 0.70 | 0.95            | 0.95      | 0.002     | -0.007    | 0.029            | 0.029 | 0.022 | 0.013 |
| 0.50  | 0.70 | 0.95            | 0.95      | 0.002     | -0.012    | 0.025            | 0.025 | 0.024 | 0.018 |
| 0.55  | 0.70 | 0.93            | 0.93      | 0.000     | -0.013    | 0.025            | 0.025 | 0.027 | 0.017 |
| 0.60  | 0.70 | 0.92            | 0.92      | 0.002     | -0.013    | 0.029            | 0.029 | 0.027 | 0.017 |
| 0.65  | 0.70 | 0.92            | 0.92      | 0.007     | -0.012    | 0.027            | 0.027 | 0.024 | 0.017 |
| 0.70  | 0.70 | 0.94            | 0.94      | 0.009     | -0.019    | 0.027            | 0.027 | 0.024 | 0.020 |
| 0.75  | 0.70 | 0.94            | 0.94      | 0.010     | -0.017    | 0.027            | 0.027 | 0.024 | 0.020 |
| 0.80  | 0.70 | 0.92            | 0.92      | 0.009     | -0.020    | 0.027            | 0.027 | 0.024 | 0.024 |
| 0.80  | 0.80 | 0.94            | 0.94      | -0.003    | -0.017    | 0.027            | 0.027 | 0.027 | 0.027 |
| 0.75  | 0.80 | 0.94            | 0.94      | 0.005     | -0.017    | 0.031            | 0.031 | 0.026 | 0.022 |
| 0.70  | 0.80 | 0.95            | 0.95      | 0.007     | -0.019    | 0.037            | 0.032 | 0.024 | 0.020 |
| 0.65  | 0.80 | 0.94            | 0.94      | 0.003     | -0.014    | 0.027            | 0.027 | 0.024 | 0.019 |
| 0.60  | 0.80 | 0.96            | 0.96      | 0.002     | -0.015    | 0.026            | 0.026 | 0.024 | 0.020 |
| 0.55  | 0.80 | 0.96            | 0.96      | 0.002     | -0.014    | 0.026            | 0.026 | 0.026 | 0.017 |
| 0.50  | 0.80 | 0.95            | 0.95      | 0.009     | -0.009    | 0.027            | 0.027 | 0.026 | 0.017 |
| 0.45  | 0.80 | 0.94            | 0.94      | 0.005     | -0.007    | 0.026            | 0.026 | 0.024 | 0.019 |
| 0.40  | 0.80 | 0.94            | 0.94      | 0.009     | -0.007    | 0.027            | 0.027 | 0.022 | 0.019 |
| 0.30  | 0.80 | 0.95            | 0.95      | 0.007     | -0.009    | 0.027            | 0.027 | 0.024 | 0.017 |
| 0.20  | 0.80 | 0.73            | 0.93      | 0.003     | -0.007    | 0.036            | 0.036 | 0.024 | 0.019 |
| 0.10  | 0.80 | 0.90            | 0.90      | 0.003     | 0.012     | 0.031            | 0.031 | 0.029 | 0.022 |
| 0.00  | 0.80 | 0.91            | 0.91      | -0.002    | 0.002     | 0.032            | 0.032 | 0.024 | 0.020 |
| -0.05 | 0.80 | 0.92            | 0.92      | -0.003    | -0.015    | 0.029            | 0.029 | 0.026 | 0.020 |
| -0.10 | 0.80 | 0.93            | 0.93      | -0.009    | -0.015    | 0.029            | 0.029 | 0.026 | 0.022 |
| -0.15 | 0.80 | 0.95            | 0.95      | -0.002    | -0.022    | 0.031            | 0.031 | 0.024 | 0.024 |
| -0.20 | 0.80 | 0.95            | 0.95      | 0.002     | -0.009    | 0.027            | 0.027 | 0.026 | 0.020 |
| -0.25 | 0.80 | 0.94            | 0.94      | 0.000     | -0.009    | 0.026            | 0.026 | 0.024 | 0.020 |
| -0.30 | 0.80 | 0.96            | 0.96      | -0.002    | -0.009    | 0.031            | 0.031 | 0.027 | 0.022 |
| -0.35 | 0.80 | 0.97            | 0.97      | 0.002     | 0.000     | 0.037            | 0.037 | 0.026 | 0.020 |
| -0.40 | 0.80 | 1.01            | 1.01      | 0.005     | 0.020     | 0.037            | 0.036 | 0.026 | 0.019 |
| -0.45 | 0.80 | 1.01            | 1.01      | 0.000     | 0.010     | 0.029            | 0.029 | 0.026 | 0.017 |
| -0.50 | 0.80 | 1.01            | 1.01      | -0.005    | 0.003     | 0.029            | 0.029 | 0.026 | 0.020 |
| -0.55 | 0.80 | 1.02            | 1.02      | 0.002     | 0.000     | 0.029            | 0.029 | 0.026 | 0.022 |
| -0.60 | 0.80 | 1.02            | 1.02      | 0.000     | 0.002     | 0.031            | 0.031 | 0.024 | 0.020 |
| -0.65 | 0.80 | 1.01            | 1.01      | -0.002    | 0.002     | 0.026            | 0.026 | 0.024 | 0.019 |
| -0.70 | 0.80 | 1.01            | 1.01      | 0.003     | -0.003    | 0.027            | 0.027 | 0.024 | 0.019 |
| -0.75 | 0.80 | 1.01            | 1.01      | 0.000     | -0.010    | 0.026            | 0.026 | 0.024 | 0.020 |
| -0.80 | 0.80 | 0.99            | 0.99      | -0.002    | -0.015    | 0.032            | 0.032 | 0.022 | 0.019 |

ORIGINAL PAGE IS  
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Table C-2, Station 4,  $\theta = 0^\circ$

| $y$   | $z$   | $U_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.00  | 1.02      | 1.01      | -0.023    | -0.018    | 0.038      | 0.038 | 0.045 | 0.028 |
| 0.70  | 0.00  | 1.03      | 1.03      | -0.023    | -0.008    | 0.030      | 0.030 | 0.026 | 0.021 |
| 0.60  | 0.00  | 1.05      | 1.05      | -0.040    | -0.007    | 0.031      | 0.031 | 0.028 | 0.023 |
| 0.50  | 0.00  | 1.06      | 1.06      | -0.045    | -0.005    | 0.033      | 0.033 | 0.026 | 0.023 |
| 0.40  | 0.00  | 1.06      | 1.06      | -0.049    | 0.000     | 0.031      | 0.031 | 0.026 | 0.021 |
| 0.30  | 0.00  | 1.07      | 1.07      | -0.054    | -0.005    | 0.031      | 0.031 | 0.026 | 0.026 |
| 0.20  | 0.00  | 1.08      | 1.08      | -0.058    | -0.003    | 0.031      | 0.031 | 0.025 | 0.020 |
| 0.10  | 0.00  | 1.10      | 1.09      | -0.061    | 0.000     | 0.030      | 0.030 | 0.025 | 0.023 |
| 0.00  | 0.00  | 1.10      | 1.10      | -0.064    | 0.003     | 0.028      | 0.028 | 0.026 | 0.021 |
| -0.05 | 0.00  | 1.12      | 1.12      | -0.066    | -0.002    | 0.031      | 0.031 | 0.026 | 0.025 |
| -0.10 | 0.00  | 1.12      | 1.12      | -0.066    | -0.003    | 0.030      | 0.030 | 0.025 | 0.025 |
| -0.15 | 0.00  | 1.12      | 1.12      | -0.068    | 0.000     | 0.033      | 0.033 | 0.028 | 0.025 |
| -0.20 | 0.00  | 1.12      | 1.12      | -0.068    | -0.003    | 0.030      | 0.030 | 0.028 | 0.031 |
| -0.25 | 0.00  | 1.12      | 1.12      | -0.066    | 0.000     | 0.030      | 0.030 | 0.026 | 0.023 |
| -0.30 | 0.00  | 1.12      | 1.12      | -0.061    | -0.003    | 0.030      | 0.030 | 0.026 | 0.025 |
| -0.35 | 0.00  | 1.13      | 1.13      | -0.061    | -0.002    | 0.031      | 0.031 | 0.025 | 0.026 |
| -0.40 | 0.00  | 1.13      | 1.13      | -0.059    | -0.003    | 0.031      | 0.031 | 0.026 | 0.023 |
| -0.45 | 0.00  | 1.13      | 1.12      | -0.054    | -0.005    | 0.031      | 0.031 | 0.026 | 0.026 |
| -0.50 | 0.00  | 1.14      | 1.14      | -0.049    | -0.005    | 0.031      | 0.031 | 0.026 | 0.025 |
| -0.55 | 0.00  | 1.15      | 1.15      | -0.046    | -0.008    | 0.033      | 0.033 | 0.025 | 0.025 |
| -0.60 | 0.00  | 1.16      | 1.16      | -0.045    | -0.008    | 0.026      | 0.026 | 0.026 | 0.025 |
| -0.65 | 0.00  | 1.17      | 1.17      | -0.036    | -0.007    | 0.031      | 0.031 | 0.028 | 0.023 |
| -0.70 | 0.00  | 1.17      | 1.17      | -0.033    | -0.007    | 0.030      | 0.030 | 0.026 | 0.025 |
| -0.75 | 0.00  | 1.16      | 1.16      | -0.031    | -0.008    | 0.031      | 0.031 | 0.026 | 0.028 |
| -0.80 | 0.00  | 1.17      | 1.17      | -0.026    | -0.008    | 0.031      | 0.031 | 0.028 | 0.025 |
| -0.80 | -0.10 | 1.18      | 1.18      | -0.026    | -0.010    | 0.031      | 0.031 | 0.030 | 0.026 |
| -0.75 | -0.10 | 1.18      | 1.18      | -0.031    | -0.008    | 0.028      | 0.028 | 0.026 | 0.028 |
| -0.70 | -0.10 | 1.17      | 1.17      | -0.035    | -0.007    | 0.028      | 0.028 | 0.028 | 0.025 |
| -0.65 | -0.10 | 1.15      | 1.15      | -0.040    | -0.003    | 0.031      | 0.031 | 0.028 | 0.028 |
| -0.60 | -0.10 | 1.16      | 1.15      | -0.040    | -0.005    | 0.026      | 0.026 | 0.025 | 0.026 |
| -0.55 | -0.10 | 1.14      | 1.14      | -0.041    | -0.005    | 0.030      | 0.030 | 0.025 | 0.026 |
| -0.50 | -0.10 | 1.14      | 1.14      | -0.048    | -0.005    | 0.033      | 0.033 | 0.028 | 0.025 |
| -0.45 | -0.10 | 1.13      | 1.13      | -0.053    | -0.002    | 0.030      | 0.030 | 0.026 | 0.025 |
| -0.40 | -0.10 | 1.13      | 1.12      | -0.058    | 0.000     | 0.028      | 0.028 | 0.028 | 0.020 |
| -0.35 | -0.10 | 1.11      | 1.11      | -0.061    | 0.000     | 0.030      | 0.030 | 0.028 | 0.023 |
| -0.30 | -0.10 | 1.12      | 1.12      | -0.064    | 0.000     | 0.028      | 0.028 | 0.026 | 0.025 |
| -0.25 | -0.10 | 1.10      | 1.10      | -0.063    | 0.003     | 0.030      | 0.030 | 0.023 | 0.018 |
| -0.20 | -0.10 | 1.10      | 1.09      | -0.064    | 0.005     | 0.031      | 0.031 | 0.026 | 0.023 |
| -0.15 | -0.10 | 1.11      | 1.11      | -0.068    | 0.002     | 0.031      | 0.031 | 0.028 | 0.023 |
| -0.10 | -0.10 | 1.09      | 1.09      | -0.064    | 0.003     | 0.030      | 0.030 | 0.026 | 0.021 |
| -0.05 | -0.10 | 1.09      | 1.09      | -0.061    | 0.002     | 0.031      | 0.031 | 0.026 | 0.023 |
| 0.00  | -0.10 | 1.09      | 1.09      | -0.069    | 0.000     | 0.033      | 0.031 | 0.028 | 0.025 |
| 0.10  | -0.10 | 1.08      | 1.07      | -0.062    | 0.000     | 0.031      | 0.031 | 0.026 | 0.021 |
| 0.20  | -0.10 | 1.05      | 1.05      | -0.059    | -0.003    | 0.028      | 0.028 | 0.025 | 0.025 |
| 0.30  | -0.10 | 1.07      | 1.07      | -0.059    | -0.002    | 0.028      | 0.028 | 0.029 | 0.023 |
| 0.40  | -0.10 | 1.05      | 1.05      | -0.052    | 0.000     | 0.031      | 0.031 | 0.026 | 0.021 |
| 0.50  | -0.10 | 1.04      | 1.04      | -0.049    | -0.005    | 0.031      | 0.031 | 0.028 | 0.023 |
| 0.60  | -0.10 | 1.04      | 1.04      | -0.044    | -0.007    | 0.029      | 0.029 | 0.028 | 0.025 |
| 0.70  | -0.10 | 1.03      | 1.03      | -0.025    | -0.007    | 0.029      | 0.029 | 0.031 | 0.020 |
| 0.80  | -0.10 | 1.04      | 1.04      | -0.021    | -0.010    | 0.028      | 0.028 | 0.029 | 0.023 |
| 0.80  | -0.20 | 1.03      | 1.03      | -0.020    | -0.008    | 0.036      | 0.036 | 0.026 | 0.023 |
| 0.70  | -0.20 | 1.04      | 1.04      | -0.025    | -0.007    | 0.031      | 0.031 | 0.043 | 0.025 |
| 0.60  | -0.20 | 1.05      | 1.05      | -0.044    | 0.000     | 0.028      | 0.028 | 0.031 | 0.021 |
| 0.50  | -0.20 | 1.06      | 1.05      | -0.049    | -0.002    | 0.031      | 0.031 | 0.028 | 0.023 |
| 0.40  | -0.20 | 1.06      | 1.05      | -0.056    | 0.000     | 0.031      | 0.031 | 0.026 | 0.023 |
| 0.30  | -0.20 | 1.07      | 1.06      | -0.059    | 0.002     | 0.028      | 0.028 | 0.026 | 0.023 |
| 0.20  | -0.20 | 1.09      | 1.09      | -0.064    | 0.002     | 0.033      | 0.033 | 0.026 | 0.025 |
| 0.10  | -0.20 | 1.08      | 1.08      | -0.065    | -0.003    | 0.031      | 0.031 | 0.028 | 0.025 |
| 0.00  | -0.20 | 1.09      | 1.09      | -0.064    | 0.000     | 0.034      | 0.034 | 0.028 | 0.023 |
| -0.05 | -0.20 | 1.09      | 1.08      | -0.065    | -0.005    | 0.033      | 0.033 | 0.033 | 0.025 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.10 | -0.20 | 1.09            | 1.09      | -0.067    | 0.002     | 0.029            | 0.031 | 0.028 | 0.023 |
| -0.15 | -0.20 | 1.10            | 1.10      | -0.070    | -0.005    | 0.033            | 0.033 | 0.028 | 0.025 |
| -0.20 | -0.20 | 1.12            | 1.11      | -0.067    | -0.002    | 0.029            | 0.029 | 0.025 | 0.026 |
| -0.25 | -0.20 | 1.11            | 1.11      | -0.064    | -0.002    | 0.029            | 0.029 | 0.023 | 0.026 |
| -0.30 | -0.20 | 1.09            | 1.09      | -0.060    | -0.002    | 0.033            | 0.033 | 0.033 | 0.025 |
| -0.35 | -0.20 | 1.10            | 1.09      | -0.057    | 0.002     | 0.029            | 0.029 | 0.031 | 0.025 |
| -0.40 | -0.20 | 1.12            | 1.12      | -0.059    | -0.003    | 0.029            | 0.029 | 0.029 | 0.029 |
| -0.45 | -0.20 | 1.13            | 1.13      | -0.054    | -0.003    | 0.031            | 0.031 | 0.029 | 0.023 |
| -0.50 | -0.20 | 1.13            | 1.13      | -0.047    | -0.003    | 0.031            | 0.031 | 0.028 | 0.025 |
| -0.55 | -0.20 | 1.13            | 1.13      | -0.047    | -0.005    | 0.031            | 0.031 | 0.029 | 0.026 |
| -0.60 | -0.20 | 1.16            | 1.15      | -0.044    | -0.008    | 0.031            | 0.031 | 0.026 | 0.026 |
| -0.65 | -0.20 | 1.16            | 1.16      | -0.038    | -0.005    | 0.029            | 0.029 | 0.028 | 0.026 |
| -0.70 | -0.20 | 1.16            | 1.16      | -0.033    | -0.002    | 0.033            | 0.033 | 0.028 | 0.023 |
| -0.75 | -0.20 | 1.16            | 1.16      | -0.031    | -0.007    | 0.034            | 0.034 | 0.031 | 0.025 |
| -0.80 | -0.20 | 1.17            | 1.17      | -0.023    | -0.008    | 0.031            | 0.031 | 0.026 | 0.025 |
| -0.60 | -0.30 | 1.16            | 1.16      | -0.038    | -0.007    | 0.031            | 0.031 | 0.023 | 0.023 |
| -0.55 | -0.30 | 1.14            | 1.14      | -0.038    | -0.011    | 0.029            | 0.029 | 0.031 | 0.028 |
| -0.50 | -0.30 | 1.13            | 1.13      | -0.046    | -0.010    | 0.034            | 0.034 | 0.025 | 0.025 |
| -0.47 | -0.30 | 1.14            | 1.13      | -0.046    | -0.007    | 0.029            | 0.029 | 0.026 | 0.026 |
| -0.40 | -0.30 | 1.12            | 1.12      | -0.047    | -0.005    | 0.033            | 0.033 | 0.025 | 0.023 |
| -0.35 | -0.30 | 1.12            | 1.11      | -0.064    | -0.011    | 0.033            | 0.033 | 0.033 | 0.029 |
| -0.30 | -0.30 | 1.10            | 1.10      | -0.067    | -0.010    | 0.034            | 0.034 | 0.031 | 0.029 |
| -0.25 | -0.30 | 1.10            | 1.10      | -0.072    | -0.011    | 0.033            | 0.033 | 0.033 | 0.029 |
| -0.20 | -0.30 | 1.10            | 1.07      | -0.100    | -0.010    | 0.049            | 0.048 | 0.123 | 0.034 |
| -0.15 | -0.30 | 1.09            | 1.09      | -0.072    | -0.011    | 0.073            | 0.073 | 0.031 | 0.031 |
| -0.10 | -0.30 | 1.08            | 1.08      | -0.070    | -0.010    | 0.034            | 0.034 | 0.031 | 0.020 |
| -0.05 | -0.30 | 1.07            | 1.09      | -0.067    | -0.010    | 0.031            | 0.031 | 0.031 | 0.031 |
| 0.00  | -0.30 | 1.07            | 1.08      | -0.069    | -0.010    | 0.031            | 0.031 | 0.031 | 0.028 |
| 0.10  | -0.70 | 1.07            | 1.07      | -0.064    | -0.011    | 0.031            | 0.031 | 0.029 | 0.029 |
| 0.20  | 0.30  | 1.07            | 1.07      | -0.064    | -0.008    | 0.034            | 0.034 | 0.029 | 0.028 |
| 0.70  | 0.30  | 1.06            | 1.05      | -0.060    | -0.013    | 0.071            | 0.031 | 0.028 | 0.029 |
| 0.40  | -0.30 | 1.05            | 1.05      | -0.056    | -0.008    | 0.073            | 0.073 | 0.031 | 0.028 |
| 0.50  | -0.20 | 1.05            | 1.04      | -0.054    | -0.010    | 0.027            | 0.029 | 0.031 | 0.029 |
| 0.60  | -0.30 | 1.04            | 1.04      | -0.044    | -0.005    | 0.029            | 0.031 | 0.029 | 0.028 |
| 0.70  | -0.70 | 1.04            | 1.04      | -0.029    | -0.010    | 0.028            | 0.028 | 0.036 | 0.028 |
| 0.30  | -0.30 | 1.07            | 1.03      | -0.046    | -0.013    | 0.026            | 0.033 | 0.005 | 0.027 |
| 0.80  | -0.40 | 1.02            | 1.02      | -0.041    | -0.008    | 0.041            | 0.039 | 0.064 | 0.034 |
| 0.75  | -0.40 | 1.04            | 1.04      | -0.031    | -0.007    | 0.029            | 0.059 | 0.038 | 0.028 |
| 0.70  | -0.40 | 1.04            | 1.04      | -0.034    | -0.005    | 0.029            | 0.079 | 0.043 | 0.019 |
| 0.65  | -0.40 | 1.02            | 1.02      | -0.036    | -0.002    | 0.074            | 0.034 | 0.034 | 0.026 |
| 0.60  | -0.40 | 1.03            | 1.03      | -0.044    | -0.003    | 0.031            | 0.031 | 0.043 | 0.025 |
| 0.55  | -0.40 | 1.05            | 1.05      | -0.056    | -0.005    | 0.031            | 0.031 | 0.031 | 0.026 |
| 0.50  | -0.40 | 1.05            | 1.04      | -0.067    | -0.005    | 0.031            | 0.031 | 0.049 | 0.025 |
| 0.45  | -0.40 | 1.06            | 1.05      | -0.082    | 0.000     | 0.046            | 0.031 | 0.095 | 0.023 |
| 0.40  | -0.40 | 1.06            | 1.05      | -0.080    | -0.008    | 0.029            | 0.028 | 0.060 | 0.029 |
| 0.30  | -0.40 | 1.06            | 1.06      | -0.078    | -0.007    | 0.073            | 0.029 | 0.082 | 0.028 |
| 0.20  | -0.40 | 1.07            | 1.06      | -0.087    | -0.005    | 0.029            | 0.029 | 0.057 | 0.029 |
| 0.10  | -0.40 | 1.08            | 1.08      | -0.085    | -0.005    | 0.024            | 0.034 | 0.046 | 0.028 |
| 0.00  | -0.40 | 1.08            | 1.08      | -0.090    | -0.008    | 0.028            | 0.038 | 0.064 | 0.029 |
| -0.05 | -0.40 | 1.10            | 1.09      | -0.082    | -0.005    | 0.031            | 0.031 | 0.041 | 0.029 |
| -0.10 | -0.40 | 1.09            | 1.09      | -0.080    | -0.005    | 0.033            | 0.033 | 0.033 | 0.026 |
| 0.15  | -0.40 | 1.10            | 1.10      | -0.075    | -0.005    | 0.028            | 0.028 | 0.031 | 0.029 |
| -0.20 | -0.40 | 1.10            | 1.10      | -0.077    | -0.010    | 0.029            | 0.029 | 0.034 | 0.021 |
| -0.25 | -0.40 | 1.11            | 1.10      | -0.077    | -0.007    | 0.071            | 0.031 | 0.033 | 0.028 |
| -0.30 | -0.40 | 1.12            | 1.12      | -0.070    | -0.011    | 0.028            | 0.028 | 0.036 | 0.029 |
| -0.75 | -0.40 | 1.12            | 1.12      | -0.067    | -0.011    | 0.037            | 0.034 | 0.036 | 0.029 |
| -0.40 | -0.40 | 1.12            | 1.12      | -0.069    | -0.015    | 0.034            | 0.034 | 0.041 | 0.019 |
| -0.45 | -0.40 | 1.13            | 1.12      | -0.067    | -0.011    | 0.031            | 0.031 | 0.039 | 0.020 |
| -0.50 | -0.40 | 1.13            | 1.12      | -0.067    | -0.013    | 0.029            | 0.031 | 0.036 | 0.028 |
| -0.55 | -0.40 | 1.14            | 1.14      | -0.064    | -0.011    | 0.027            | 0.033 | 0.041 | 0.021 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | Urms | U    | V      | W      | U' rms | u'    | v'    | w'    |
|----------|----------|------|------|--------|--------|--------|-------|-------|-------|
| -0.60    | -0.40    | 1.14 | 1.14 | -0.057 | -0.011 | 0.033  | 0.034 | 0.034 | 0.028 |
| -0.65    | -0.40    | 1.15 | 1.14 | -0.047 | -0.003 | 0.039  | 0.039 | 0.034 | 0.029 |
| -0.70    | -0.40    | 1.16 | 1.16 | -0.046 | -0.002 | 0.046  | 0.046 | 0.031 | 0.026 |
| -0.75    | -0.40    | 1.17 | 1.17 | -0.039 | -0.007 | 0.041  | 0.041 | 0.033 | 0.028 |
| -0.80    | -0.40    | 1.17 | 1.17 | -0.038 | 0.003  | 0.056  | 0.057 | 0.036 | 0.023 |
| -0.80    | -0.50    | 1.19 | 1.19 | -0.041 | -0.005 | 0.059  | 0.059 | 0.033 | 0.029 |
| -0.75    | -0.50    | 1.17 | 1.17 | -0.039 | -0.003 | 0.047  | 0.047 | 0.031 | 0.026 |
| -0.70    | -0.50    | 1.17 | 1.17 | -0.044 | -0.003 | 0.036  | 0.036 | 0.036 | 0.025 |
| -0.65    | -0.50    | 1.16 | 1.15 | -0.051 | -0.002 | 0.036  | 0.036 | 0.033 | 0.028 |
| -0.60    | -0.50    | 1.15 | 1.15 | -0.052 | -0.003 | 0.039  | 0.039 | 0.031 | 0.028 |
| -0.55    | -0.50    | 1.15 | 1.15 | -0.056 | -0.005 | 0.041  | 0.041 | 0.036 | 0.028 |
| -0.50    | -0.50    | 1.14 | 1.14 | -0.061 | -0.003 | 0.039  | 0.039 | 0.031 | 0.028 |
| -0.45    | -0.50    | 1.14 | 1.13 | -0.064 | -0.005 | 0.039  | 0.039 | 0.057 | 0.029 |
| -0.40    | -0.50    | 1.14 | 1.14 | -0.065 | 0.000  | 0.056  | 0.056 | 0.031 | 0.023 |
| -0.35    | -0.50    | 1.13 | 1.12 | -0.067 | 0.003  | 0.036  | 0.036 | 0.029 | 0.025 |
| -0.30    | -0.50    | 1.12 | 1.11 | -0.069 | 0.000  | 0.043  | 0.043 | 0.043 | 0.028 |
| -0.25    | -0.50    | 1.12 | 1.11 | -0.072 | 0.005  | 0.043  | 0.043 | 0.036 | 0.023 |
| -0.20    | -0.50    | 1.11 | 1.11 | -0.070 | 0.002  | 0.036  | 0.036 | 0.033 | 0.028 |
| -0.15    | -0.50    | 1.10 | 1.10 | -0.065 | 0.002  | 0.039  | 0.039 | 0.033 | 0.023 |
| -0.10    | -0.50    | 1.09 | 1.08 | -0.067 | 0.002  | 0.034  | 0.033 | 0.039 | 0.026 |
| -0.05    | -0.50    | 1.10 | 1.10 | -0.065 | 0.008  | 0.034  | 0.034 | 0.033 | 0.021 |
| 0.00     | -0.50    | 1.08 | 1.08 | -0.065 | 0.005  | 0.041  | 0.041 | 0.031 | 0.021 |
| 0.10     | -0.50    | 1.08 | 1.08 | -0.062 | 0.007  | 0.038  | 0.038 | 0.033 | 0.023 |
| 0.20     | -0.50    | 1.07 | 1.07 | -0.061 | 0.005  | 0.033  | 0.033 | 0.036 | 0.025 |
| 0.30     | -0.50    | 1.07 | 1.06 | -0.062 | 0.007  | 0.038  | 0.038 | 0.031 | 0.025 |
| 0.40     | -0.50    | 1.06 | 1.06 | -0.057 | 0.008  | 0.044  | 0.044 | 0.044 | 0.025 |
| 0.45     | -0.50    | 1.06 | 1.06 | -0.052 | 0.008  | 0.044  | 0.044 | 0.036 | 0.023 |
| 0.50     | -0.50    | 1.06 | 1.06 | -0.047 | 0.011  | 0.044  | 0.044 | 0.029 | 0.021 |
| 0.55     | -0.50    | 1.05 | 1.05 | -0.041 | 0.005  | 0.033  | 0.033 | 0.036 | 0.023 |
| 0.60     | -0.50    | 1.06 | 1.05 | -0.031 | 0.008  | 0.039  | 0.039 | 0.033 | 0.020 |
| 0.65     | -0.50    | 1.04 | 1.04 | -0.034 | 0.007  | 0.043  | 0.043 | 0.033 | 0.018 |
| 0.70     | -0.50    | 1.04 | 1.04 | -0.033 | 0.007  | 0.041  | 0.041 | 0.044 | 0.018 |
| 0.75     | -0.50    | 1.05 | 1.05 | -0.028 | 0.002  | 0.051  | 0.051 | 0.046 | 0.023 |
| 0.80     | -0.50    | 1.03 | 1.03 | -0.025 | -0.002 | 0.049  | 0.049 | 0.036 | 0.023 |
| 0.80     | -0.60    | 1.01 | 1.00 | -0.029 | -0.002 | 0.062  | 0.062 | 0.057 | 0.024 |
| 0.75     | -0.60    | 1.04 | 1.04 | -0.021 | 0.002  | 0.044  | 0.044 | 0.039 | 0.029 |
| 0.70     | -0.60    | 1.06 | 1.05 | -0.036 | 0.005  | 0.039  | 0.038 | 0.057 | 0.025 |
| 0.65     | -0.60    | 1.06 | 1.06 | -0.031 | 0.007  | 0.039  | 0.038 | 0.052 | 0.020 |
| 0.60     | -0.60    | 1.05 | 1.05 | -0.043 | 0.003  | 0.043  | 0.043 | 0.067 | 0.021 |
| 0.55     | -0.60    | 1.05 | 1.05 | -0.039 | 0.003  | 0.043  | 0.043 | 0.044 | 0.021 |
| 0.50     | -0.60    | 1.05 | 1.04 | -0.049 | 0.005  | 0.047  | 0.047 | 0.037 | 0.020 |
| 0.45     | -0.60    | 1.05 | 1.05 | -0.051 | -0.003 | 0.038  | 0.038 | 0.073 | 0.025 |
| 0.40     | -0.60    | 1.04 | 1.04 | -0.049 | 0.002  | 0.036  | 0.036 | 0.029 | 0.025 |
| 0.30     | -0.60    | 1.08 | 1.07 | -0.059 | 0.003  | 0.047  | 0.049 | 0.036 | 0.023 |
| 0.20     | -0.60    | 1.07 | 1.07 | -0.059 | 0.000  | 0.041  | 0.043 | 0.036 | 0.021 |
| 0.10     | -0.60    | 1.08 | 1.08 | -0.067 | 0.002  | 0.043  | 0.041 | 0.051 | 0.025 |
| 0.00     | -0.60    | 1.10 | 1.09 | -0.059 | 0.000  | 0.054  | 0.054 | 0.036 | 0.023 |
| -0.05    | -0.60    | 1.08 | 1.08 | -0.062 | 0.003  | 0.042  | 0.042 | 0.041 | 0.024 |
| -0.10    | -0.60    | 1.10 | 1.10 | -0.065 | 0.003  | 0.042  | 0.042 | 0.033 | 0.023 |
| -0.15    | -0.60    | 1.10 | 1.10 | -0.065 | 0.007  | 0.049  | 0.049 | 0.031 | 0.023 |
| -0.20    | -0.60    | 1.10 | 1.09 | -0.064 | 0.005  | 0.054  | 0.055 | 0.033 | 0.023 |
| -0.25    | -0.60    | 1.11 | 1.11 | -0.062 | 0.002  | 0.039  | 0.039 | 0.033 | 0.020 |
| -0.30    | -0.60    | 1.10 | 1.10 | -0.065 | 0.008  | 0.041  | 0.041 | 0.033 | 0.021 |
| -0.35    | -0.60    | 1.12 | 1.12 | -0.064 | 0.002  | 0.039  | 0.039 | 0.033 | 0.026 |
| -0.40    | -0.60    | 1.12 | 1.12 | -0.055 | 0.002  | 0.057  | 0.057 | 0.031 | 0.023 |
| -0.45    | -0.60    | 1.12 | 1.12 | -0.051 | 0.003  | 0.041  | 0.041 | 0.037 | 0.023 |
| -0.50    | -0.60    | 1.14 | 1.14 | -0.052 | -0.002 | 0.060  | 0.060 | 0.034 | 0.028 |
| -0.55    | -0.60    | 1.15 | 1.15 | -0.047 | -0.002 | 0.079  | 0.079 | 0.034 | 0.031 |
| -0.60    | -0.60    | 1.12 | 1.12 | -0.057 | 0.003  | 0.047  | 0.047 | 0.033 | 0.026 |
| -0.65    | -0.60    | 1.13 | 1.13 | -0.036 | -0.007 | 0.036  | 0.076 | 0.034 | 0.033 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.70    | -0.60    | 1.16            | 1.16      | -0.031    | -0.002    | 0.047      | 0.047 | 0.031 | 0.028 |
| -0.75    | -0.60    | 1.16            | 1.16      | -0.024    | -0.002    | 0.039      | 0.039 | 0.029 | 0.024 |
| -0.80    | -0.60    | 1.15            | 1.15      | -0.018    | -0.002    | 0.039      | 0.039 | 0.033 | 0.028 |
| -0.80    | -0.70    | 1.16            | 1.16      | -0.021    | 0.003     | 0.049      | 0.049 | 0.037 | 0.026 |
| -0.75    | -0.70    | 1.15            | 1.15      | -0.029    | -0.002    | 0.037      | 0.037 | 0.037 | 0.026 |
| -0.70    | -0.70    | 1.16            | 1.16      | -0.031    | 0.002     | 0.037      | 0.037 | 0.031 | 0.026 |
| -0.65    | -0.70    | 1.14            | 1.14      | -0.037    | 0.003     | 0.046      | 0.046 | 0.029 | 0.023 |
| -0.60    | -0.70    | 1.13            | 1.13      | -0.037    | 0.005     | 0.060      | 0.060 | 0.033 | 0.023 |
| -0.55    | -0.70    | 1.14            | 1.14      | -0.037    | 0.000     | 0.037      | 0.037 | 0.036 | 0.026 |
| -0.50    | -0.70    | 1.14            | 1.14      | -0.041    | 0.000     | 0.037      | 0.037 | 0.031 | 0.028 |
| -0.45    | -0.70    | 1.11            | 1.11      | -0.049    | -0.003    | 0.057      | 0.057 | 0.031 | 0.029 |
| -0.40    | -0.70    | 1.12            | 1.12      | -0.051    | 0.002     | 0.079      | 0.039 | 0.036 | 0.026 |
| -0.35    | -0.70    | 1.12            | 1.12      | -0.054    | 0.002     | 0.041      | 0.041 | 0.031 | 0.024 |
| -0.30    | -0.70    | 1.12            | 1.12      | -0.057    | 0.000     | 0.041      | 0.041 | 0.031 | 0.026 |
| -0.25    | -0.70    | 1.10            | 1.10      | -0.059    | 0.000     | 0.065      | 0.065 | 0.034 | 0.026 |
| -0.20    | -0.70    | 1.10            | 1.10      | -0.062    | -0.002    | 0.036      | 0.036 | 0.036 | 0.024 |
| -0.15    | -0.70    | 1.09            | 1.09      | -0.060    | 0.000     | 0.051      | 0.051 | 0.037 | 0.029 |
| -0.10    | -0.70    | 1.12            | 1.12      | -0.064    | 0.000     | 0.047      | 0.049 | 0.029 | 0.026 |
| -0.05    | -0.70    | 1.10            | 1.10      | -0.065    | -0.002    | 0.044      | 0.044 | 0.033 | 0.023 |
| 0.00     | -0.70    | 1.08            | 1.08      | -0.060    | 0.000     | 0.039      | 0.041 | 0.034 | 0.023 |
| 0.10     | -0.70    | 1.08            | 1.08      | -0.060    | 0.000     | 0.039      | 0.039 | 0.036 | 0.024 |
| 0.20     | -0.70    | 1.06            | 1.06      | -0.060    | 0.000     | 0.037      | 0.037 | 0.036 | 0.026 |
| 0.30     | -0.70    | 1.06            | 1.05      | -0.057    | 0.005     | 0.034      | 0.034 | 0.031 | 0.026 |
| 0.40     | -0.70    | 1.05            | 1.04      | -0.049    | 0.002     | 0.039      | 0.039 | 0.031 | 0.023 |
| 0.45     | -0.70    | 1.04            | 1.04      | -0.054    | -0.002    | 0.041      | 0.041 | 0.033 | 0.026 |
| 0.50     | -0.70    | 1.05            | 1.05      | -0.049    | 0.002     | 0.037      | 0.037 | 0.060 | 0.026 |
| 0.55     | -0.70    | 1.04            | 1.03      | -0.044    | 0.000     | 0.042      | 0.041 | 0.041 | 0.026 |
| 0.60     | -0.70    | 1.03            | 1.03      | -0.034    | 0.003     | 0.033      | 0.033 | 0.051 | 0.023 |
| 0.65     | -0.70    | 1.04            | 1.04      | -0.028    | 0.007     | 0.039      | 0.039 | 0.039 | 0.023 |
| 0.70     | -0.70    | 1.03            | 1.03      | -0.029    | 0.007     | 0.036      | 0.024 | 0.042 | 0.026 |
| 0.75     | -0.70    | 1.03            | 1.03      | -0.026    | 0.005     | 0.041      | 0.041 | 0.041 | 0.028 |
| 0.80     | -0.70    | 0.96            | 0.96      | -0.026    | 0.007     | 0.070      | 0.070 | 0.039 | 0.049 |
| 0.80     | -0.80    | 0.87            | 0.87      | -0.028    | -0.008    | 0.094      | 0.076 | 0.041 | 0.059 |
| 0.75     | -0.80    | 0.93            | 0.93      | -0.029    | 0.000     | 0.075      | 0.075 | 0.050 | 0.046 |
| 0.70     | -0.80    | 0.96            | 0.96      | -0.031    | 0.007     | 0.063      | 0.065 | 0.039 | 0.044 |
| 0.65     | -0.80    | 1.00            | 0.97      | -0.041    | 0.010     | 0.050      | 0.050 | 0.054 | 0.033 |
| 0.60     | -0.80    | 1.02            | 1.02      | -0.039    | 0.003     | 0.041      | 0.041 | 0.054 | 0.029 |
| 0.55     | -0.80    | 1.03            | 1.03      | -0.039    | 0.005     | 0.036      | 0.036 | 0.039 | 0.024 |
| 0.50     | -0.80    | 1.03            | 1.03      | -0.047    | 0.005     | 0.036      | 0.036 | 0.046 | 0.026 |
| 0.45     | -0.80    | 1.04            | 1.04      | -0.054    | 0.003     | 0.036      | 0.026 | 0.076 | 0.024 |
| 0.40     | -0.80    | 1.05            | 1.04      | -0.059    | 0.002     | 0.039      | 0.039 | 0.029 | 0.026 |
| 0.30     | -0.80    | 1.05            | 1.04      | -0.062    | -0.002    | 0.033      | 0.033 | 0.039 | 0.024 |
| 0.20     | -0.80    | 1.07            | 1.07      | -0.062    | -0.002    | 0.031      | 0.031 | 0.036 | 0.024 |
| 0.10     | -0.80    | 1.07            | 1.07      | -0.063    | -0.007    | 0.031      | 0.031 | 0.037 | 0.026 |
| 0.00     | -0.80    | 1.08            | 1.08      | -0.063    | -0.005    | 0.033      | 0.033 | 0.033 | 0.024 |
| -0.05    | -0.80    | 1.07            | 1.09      | -0.067    | -0.007    | 0.036      | 0.036 | 0.034 | 0.029 |
| -0.10    | -0.80    | 1.09            | 1.09      | -0.063    | -0.005    | 0.041      | 0.041 | 0.031 | 0.024 |
| -0.15    | -0.80    | 1.09            | 1.09      | -0.059    | -0.007    | 0.034      | 0.034 | 0.034 | 0.028 |
| -0.20    | -0.80    | 1.10            | 1.10      | -0.054    | -0.002    | 0.031      | 0.033 | 0.036 | 0.024 |
| -0.25    | -0.80    | 1.11            | 1.11      | -0.059    | -0.007    | 0.037      | 0.037 | 0.074 | 0.028 |
| -0.30    | -0.80    | 1.09            | 1.09      | -0.054    | -0.002    | 0.033      | 0.033 | 0.031 | 0.023 |
| -0.35    | -0.80    | 1.12            | 1.11      | -0.057    | -0.008    | 0.036      | 0.036 | 0.033 | 0.028 |
| -0.40    | -0.80    | 1.10            | 1.10      | -0.052    | -0.003    | 0.034      | 0.034 | 0.039 | 0.026 |
| -0.45    | -0.80    | 1.12            | 1.12      | -0.047    | -0.010    | 0.036      | 0.026 | 0.029 | 0.029 |
| -0.50    | -0.80    | 1.13            | 1.12      | -0.046    | -0.007    | 0.034      | 0.034 | 0.031 | 0.026 |
| -0.55    | -0.80    | 1.14            | 1.14      | -0.047    | -0.005    | 0.039      | 0.039 | 0.029 | 0.029 |
| -0.60    | -0.80    | 1.15            | 1.15      | -0.044    | -0.003    | 0.034      | 0.034 | 0.033 | 0.026 |
| -0.65    | -0.80    | 1.15            | 1.15      | -0.037    | -0.003    | 0.037      | 0.037 | 0.034 | 0.016 |
| -0.70    | -0.80    | 1.16            | 1.16      | -0.042    | -0.003    | 0.031      | 0.031 | 0.033 | 0.018 |
| -0.75    | -0.80    | 1.15            | 1.15      | -0.037    | -0.005    | 0.036      | 0.034 | 0.046 | 0.031 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.80    | -0.80    | 1.15            | 1.15      | -0.023    | -0.003    | 0.039            | 0.037 | 0.044 | 0.031 |
| -0.80    | -0.90    | 1.09            | 1.08      | -0.067    | -0.013    | 0.074            | 0.074 | 0.045 | 0.052 |
| -0.75    | -0.70    | 1.12            | 1.12      | -0.057    | 0.010     | 0.074            | 0.074 | 0.052 | 0.045 |
| -0.70    | -0.70    | 1.15            | 1.15      | -0.047    | 0.007     | 0.065            | 0.065 | 0.057 | 0.054 |
| -0.65    | -0.90    | 1.14            | 1.14      | -0.050    | -0.010    | 0.064            | 0.064 | 0.033 | 0.054 |
| -0.60    | -0.90    | 1.15            | 1.14      | -0.072    | -0.005    | 0.074            | 0.074 | 0.040 | 0.052 |
| -0.55    | -0.90    | 1.13            | 1.13      | -0.067    | -0.010    | 0.064            | 0.065 | 0.032 | 0.045 |
| -0.50    | -0.90    | 1.16            | 1.16      | -0.055    | -0.008    | 0.045            | 0.045 | 0.027 | 0.027 |
| -0.40    | -0.70    | 1.16            | 1.15      | -0.062    | -0.005    | 0.043            | 0.043 | 0.022 | 0.023 |
| -0.30    | -0.90    | 1.13            | 1.13      | -0.075    | -0.017    | 0.050            | 0.050 | 0.033 | 0.032 |
| -0.20    | -0.90    | 1.14            | 1.14      | -0.060    | -0.003    | 0.055            | 0.055 | 0.042 | 0.023 |
| -0.10    | -0.90    | 1.12            | 1.12      | -0.077    | -0.010    | 0.048            | 0.050 | 0.030 | 0.037 |
| 0.00     | -0.90    | 1.09            | 1.09      | -0.062    | -0.020    | 0.054            | 0.055 | 0.030 | 0.040 |
| 0.10     | -0.90    | 1.10            | 1.10      | -0.064    | -0.013    | 0.040            | 0.042 | 0.028 | 0.015 |
| 0.20     | -0.90    | 1.07            | 1.07      | -0.069    | 0.003     | 0.040            | 0.040 | 0.042 | 0.023 |
| 0.30     | -0.90    | 1.05            | 1.05      | -0.060    | -0.002    | 0.042            | 0.042 | 0.028 | 0.030 |
| 0.40     | -0.90    | 1.01            | 1.01      | -0.065    | -0.002    | 0.077            | 0.079 | 0.038 | 0.060 |
| 0.50     | -0.90    | 1.01            | 1.00      | -0.079    | -0.003    | 0.062            | 0.060 | 0.043 | 0.042 |
| 0.60     | -0.90    | 0.96            | 0.96      | -0.062    | -0.007    | 0.005            | 0.087 | 0.037 | 0.055 |
| 0.70     | -0.70    | 0.81            | 0.81      | -0.057    | -0.002    | 0.089            | 0.089 | 0.032 | 0.065 |
| 0.80     | -0.70    | 0.74            | 0.73      | 0.055     | -0.018    | 0.094            | 0.095 | 0.065 | 0.065 |
| 0.80     | -0.93    | 1.05            | 1.05      | -0.040    | -0.008    | 0.087            | 0.085 | 0.053 | 0.050 |
| -0.75    | -0.73    | 1.10            | 1.10      | -0.055    | -0.007    | 0.082            | 0.083 | 0.062 | 0.057 |
| -0.70    | -0.97    | 1.05            | 1.04      | -0.058    | -0.007    | 0.110            | 0.111 | 0.065 | 0.050 |
| -0.65    | -0.77    | 1.06            | 1.06      | -0.068    | 0.012     | 0.113            | 0.117 | 0.058 | 0.052 |
| -0.60    | -0.93    | 1.13            | 1.17      | -0.075    | -0.012    | 0.077            | 0.077 | 0.038 | 0.048 |
| -0.55    | -0.93    | 1.18            | 1.17      | -0.070    | 0.000     | 0.045            | 0.043 | 0.080 | 0.031 |
| -0.50    | -0.93    | 1.17            | 1.17      | -0.057    | -0.012    | 0.072            | 0.072 | 0.053 | 0.038 |
| -0.40    | -0.93    | 1.13            | 1.13      | -0.062    | 0.007     | 0.038            | 0.040 | 0.040 | 0.017 |
| -0.30    | -0.93    | 1.14            | 1.14      | -0.068    | 0.005     | 0.040            | 0.040 | 0.038 | 0.020 |
| -0.20    | -0.97    | 1.13            | 1.13      | -0.057    | 0.002     | 0.023            | 0.023 | 0.025 | 0.018 |
| -0.10    | -0.93    | 1.09            | 1.09      | -0.060    | -0.002    | 0.027            | 0.027 | 0.072 | 0.010 |
| 0.00     | -0.93    | 1.08            | 1.08      | -0.055    | -0.008    | 0.035            | 0.035 | 0.027 | 0.023 |
| 0.20     | -0.93    | 1.08            | 1.08      | -0.065    | -0.010    | 0.037            | 0.035 | 0.032 | 0.025 |
| 0.30     | -0.93    | 1.06            | 1.05      | -0.060    | -0.003    | 0.043            | 0.043 | 0.025 | 0.043 |
| 0.40     | -0.93    | 1.02            | 1.01      | -0.060    | -0.013    | 0.092            | 0.092 | 0.030 | 0.032 |
| 0.50     | -0.93    | 0.96            | 0.96      | -0.055    | -0.015    | 0.095            | 0.095 | 0.030 | 0.047 |
| 0.55     | -0.93    | 0.93            | 0.93      | -0.047    | -0.012    | 0.083            | 0.083 | 0.025 | 0.058 |
| 0.60     | -0.93    | 0.90            | 0.89      | -0.043    | -0.007    | 0.123            | 0.127 | 0.032 | 0.055 |
| 0.65     | -0.93    | 0.83            | 0.82      | -0.063    | 0.017     | 0.068            | 0.070 | 0.048 | 0.065 |
| 0.70     | -0.93    | 0.81            | 0.81      | -0.038    | 0.003     | 0.100            | 0.100 | 0.040 | 0.053 |
| 0.80     | -0.93    | 0.74            | 0.73      | -0.038    | -0.010    | 0.120            | 0.120 | 0.085 | 0.040 |
| -0.80    | -0.95    | 1.00            | 0.99      | -0.063    | 0.005     | 0.078            | 0.081 | 0.086 | 0.064 |
| -0.75    | -0.95    | 0.95            | 0.94      | -0.035    | -0.008    | 0.122            | 0.122 | 0.073 | 0.057 |
| -0.70    | -0.75    | 0.94            | 0.94      | -0.048    | -0.005    | 0.137            | 0.137 | 0.061 | 0.056 |
| -0.65    | -0.95    | 1.03            | 1.02      | -0.074    | -0.007    | 0.119            | 0.119 | 0.073 | 0.067 |
| -0.60    | -0.75    | 1.01            | 1.00      | -0.071    | -0.007    | 0.145            | 0.147 | 0.064 | 0.053 |
| -0.55    | -0.95    | 1.07            | 1.02      | -0.043    | -0.005    | 0.067            | 0.068 | 0.051 | 0.056 |
| -0.50    | -0.95    | 1.06            | 1.06      | -0.071    | 0.005     | 0.058            | 0.058 | 0.064 | 0.070 |
| -0.40    | -0.95    | 1.05            | 1.05      | -0.063    | -0.003    | 0.069            | 0.069 | 0.056 | 0.026 |
| -0.30    | -0.95    | 1.03            | 1.03      | -0.073    | 0.000     | 0.055            | 0.056 | 0.036 | 0.021 |
| -0.20    | -0.95    | 1.03            | 1.02      | -0.004    | -0.003    | 0.041            | 0.041 | 0.026 | 0.020 |
| -0.10    | -0.95    | 1.02            | 1.01      | -0.078    | -0.002    | 0.051            | 0.053 | 0.033 | 0.028 |
| 0.00     | -0.95    | 1.02            | 1.02      | -0.074    | -0.005    | 0.053            | 0.053 | 0.028 | 0.018 |
| 0.10     | -0.95    | 1.03            | 1.03      | -0.068    | 0.015     | 0.056            | 0.056 | 0.035 | 0.041 |
| 0.20     | -0.95    | 1.00            | 1.00      | -0.081    | 0.026     | 0.079            | 0.081 | 0.033 | 0.046 |
| 0.30     | -0.95    | 1.00            | 0.99      | -0.066    | -0.023    | 0.089            | 0.089 | 0.045 | 0.053 |
| 0.40     | -0.95    | 0.94            | 0.93      | -0.073    | -0.028    | 0.102            | 0.104 | 0.058 | 0.067 |
| 0.50     | -0.95    | 0.91            | 0.91      | -0.050    | -0.020    | 0.131            | 0.132 | 0.030 | 0.050 |
| 0.60     | -0.95    | 0.86            | 0.86      | -0.051    | -0.023    | 0.101            | 0.101 | 0.053 | 0.051 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.70  | -0.95 | 0.71            | 0.71      | -0.050    | -0.007    | 0.086            | 0.086 | 0.058 | 0.063 |
| 0.80  | -0.95 | 0.66            | 0.66      | -0.041    | -0.003    | 0.088            | 0.088 | 0.058 | 0.048 |
| -0.80 | -0.96 | 0.94            | 0.93      | -0.077    | -0.003    | 0.114            | 0.118 | 0.074 | 0.069 |
| -0.75 | -0.96 | 0.94            | 0.93      | -0.067    | -0.005    | 0.114            | 0.114 | 0.067 | 0.071 |
| -0.70 | -0.96 | 0.92            | 0.91      | -0.069    | 0.010     | 0.113            | 0.116 | 0.087 | 0.076 |
| -0.65 | -0.96 | 0.91            | 0.90      | -0.082    | 0.000     | 0.161            | 0.163 | 0.077 | 0.057 |
| -0.60 | -0.96 | 0.90            | 0.89      | -0.089    | 0.007     | 0.116            | 0.116 | 0.079 | 0.050 |
| -0.55 | -0.96 | 0.92            | 0.91      | -0.064    | 0.010     | 0.114            | 0.119 | 0.076 | 0.050 |
| -0.50 | -0.96 | 0.92            | 0.91      | -0.096    | 0.002     | 0.084            | 0.086 | 0.052 | 0.020 |
| -0.40 | -0.96 | 0.95            | 0.94      | -0.072    | -0.003    | 0.077            | 0.097 | 0.050 | 0.042 |
| -0.30 | -0.96 | 0.92            | 0.92      | -0.096    | -0.005    | 0.052            | 0.052 | 0.040 | 0.022 |
| -0.20 | -0.96 | 0.95            | 0.94      | -0.082    | 0.000     | 0.079            | 0.079 | 0.037 | 0.018 |
| -0.10 | -0.96 | 0.72            | 0.92      | -0.086    | 0.003     | 0.072            | 0.072 | 0.034 | 0.025 |
| 0.00  | -0.96 | 0.94            | 0.93      | -0.084    | -0.005    | 0.060            | 0.059 | 0.040 | 0.020 |
| 0.10  | -0.96 | 0.94            | 0.94      | -0.067    | -0.012    | 0.062            | 0.064 | 0.032 | 0.025 |
| 0.20  | -0.96 | 0.95            | 0.95      | -0.066    | -0.012    | 0.087            | 0.087 | 0.035 | 0.025 |
| 0.30  | -0.96 | 0.73            | 0.93      | -0.064    | -0.020    | 0.104            | 0.106 | 0.037 | 0.045 |
| 0.40  | -0.96 | 0.90            | 0.89      | -0.079    | -0.010    | 0.119            | 0.119 | 0.045 | 0.057 |
| 0.50  | -0.96 | 0.79            | 0.78      | -0.054    | 0.000     | 0.106            | 0.106 | 0.032 | 0.057 |
| 0.60  | -0.96 | 0.83            | 0.83      | -0.067    | -0.030    | 0.092            | 0.096 | 0.047 | 0.066 |
| 0.70  | -0.96 | 0.67            | 0.66      | -0.057    | 0.007     | 0.126            | 0.128 | 0.060 | 0.057 |
| 0.80  | -0.96 | 0.64            | 0.64      | -0.044    | -0.013    | 0.096            | 0.097 | 0.044 | 0.067 |
| 0.70  | 0.00  | 1.06            | 1.05      | -0.026    | -0.008    | 0.043            | 0.043 | 0.041 | 0.026 |
| 0.60  | 0.00  | 1.06            | 1.06      | -0.041    | -0.003    | 0.033            | 0.033 | 0.033 | 0.026 |
| 0.50  | 0.00  | 1.06            | 1.06      | -0.046    | 0.002     | 0.036            | 0.036 | 0.030 | 0.023 |
| 0.40  | 0.00  | 1.07            | 1.07      | -0.062    | 0.003     | 0.043            | 0.043 | 0.054 | 0.023 |
| 0.30  | 0.00  | 1.07            | 1.07      | -0.069    | 0.005     | 0.038            | 0.036 | 0.054 | 0.021 |
| 0.20  | 0.00  | 1.08            | 1.08      | -0.066    | 0.007     | 0.039            | 0.039 | 0.049 | 0.021 |
| 0.10  | 0.00  | 1.08            | 1.08      | -0.069    | 0.000     | 0.031            | 0.031 | 0.064 | 0.023 |
| 0.00  | 0.00  | 1.12            | 1.12      | -0.077    | 0.005     | 0.056            | 0.058 | 0.064 | 0.025 |
| -0.05 | 0.00  | 1.11            | 1.11      | -0.066    | 0.003     | 0.031            | 0.031 | 0.036 | 0.028 |
| -0.10 | 0.00  | 1.11            | 1.11      | -0.076    | 0.007     | 0.041            | 0.043 | 0.061 | 0.025 |
| -0.15 | 0.00  | 1.10            | 1.09      | -0.071    | 0.003     | 0.039            | 0.038 | 0.061 | 0.021 |
| -0.20 | 0.00  | 1.10            | 1.10      | -0.067    | 0.007     | 0.041            | 0.041 | 0.039 | 0.025 |
| -0.25 | 0.00  | 1.11            | 1.11      | -0.067    | 0.005     | 0.035            | 0.035 | 0.046 | 0.026 |
| -0.30 | 0.00  | 1.15            | 1.12      | -0.066    | 0.000     | 0.036            | 0.035 | 0.059 | 0.028 |
| -0.35 | 0.00  | 1.12            | 1.12      | -0.059    | 0.000     | 0.036            | 0.038 | 0.039 | 0.030 |
| -0.40 | 0.00  | 1.13            | 1.12      | -0.067    | -0.002    | 0.038            | 0.036 | 0.053 | 0.026 |
| -0.45 | 0.00  | 1.14            | 1.13      | -0.058    | -0.002    | 0.038            | 0.038 | 0.048 | 0.026 |
| -0.50 | 0.00  | 1.16            | 1.16      | -0.051    | -0.002    | 0.051            | 0.051 | 0.036 | 0.028 |
| -0.55 | 0.00  | 1.15            | 1.14      | -0.043    | -0.005    | 0.058            | 0.056 | 0.048 | 0.030 |
| -0.60 | 0.00  | 1.17            | 1.12      | -0.053    | 0.000     | 0.047            | 0.043 | 0.054 | 0.025 |
| -0.65 | 0.00  | 1.18            | 1.17      | -0.051    | -0.003    | 0.053            | 0.051 | 0.061 | 0.026 |
| -0.70 | 0.00  | 1.16            | 1.16      | -0.038    | -0.003    | 0.041            | 0.041 | 0.035 | 0.026 |
| -0.75 | 0.00  | 1.16            | 1.16      | -0.030    | -0.008    | 0.066            | 0.066 | 0.036 | 0.026 |
| -0.80 | 0.00  | 1.18            | 1.10      | -0.030    | -0.007    | 0.073            | 0.035 | 0.041 | 0.026 |
| -0.80 | 0.10  | 1.18            | 1.18      | -0.018    | -0.008    | 0.054            | 0.054 | 0.033 | 0.026 |
| -0.75 | 0.10  | 1.17            | 1.17      | -0.033    | -0.002    | 0.036            | 0.036 | 0.031 | 0.025 |
| -0.70 | 0.10  | 1.15            | 1.15      | -0.031    | 0.000     | 0.038            | 0.039 | 0.036 | 0.026 |
| -0.65 | 0.10  | 1.16            | 1.16      | -0.036    | 0.000     | 0.041            | 0.041 | 0.031 | 0.028 |
| -0.60 | 0.10  | 1.16            | 1.16      | -0.038    | -0.003    | 0.036            | 0.036 | 0.033 | 0.030 |
| -0.55 | 0.10  | 1.16            | 1.16      | -0.044    | 0.003     | 0.039            | 0.038 | 0.031 | 0.026 |
| -0.50 | 0.10  | 1.14            | 1.14      | -0.049    | 0.002     | 0.036            | 0.036 | 0.030 | 0.028 |
| -0.45 | 0.10  | 1.15            | 1.15      | -0.053    | -0.002    | 0.039            | 0.039 | 0.033 | 0.028 |
| -0.40 | 0.10  | 1.12            | 1.12      | -0.054    | 0.002     | 0.039            | 0.041 | 0.035 | 0.031 |
| -0.35 | 0.10  | 1.15            | 1.15      | -0.061    | 0.002     | 0.039            | 0.039 | 0.035 | 0.028 |
| -0.30 | 0.10  | 1.12            | 1.11      | -0.059    | 0.002     | 0.033            | 0.035 | 0.035 | 0.028 |
| -0.25 | 0.10  | 1.11            | 1.11      | -0.071    | 0.003     | 0.038            | 0.038 | 0.031 | 0.028 |
| -0.20 | 0.10  | 1.12            | 1.11      | -0.064    | 0.005     | 0.035            | 0.035 | 0.033 | 0.028 |
| -0.15 | 0.10  | 1.10            | 1.10      | -0.069    | 0.007     | 0.041            | 0.041 | 0.030 | 0.030 |

ORIGINAL PAGE IS  
OF POOR QUALITY

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.10 | 0.10 | 1.09            | 1.09      | -0.074    | 0.008     | 0.039            | 0.041 | 0.038 | 0.028 |
| -0.05 | 0.10 | 1.09            | 1.09      | -0.067    | 0.007     | 0.033            | 0.033 | 0.030 | 0.020 |
| 0.00  | 0.10 | 1.10            | 1.10      | -0.072    | 0.005     | 0.043            | 0.043 | 0.026 | 0.030 |
| 0.10  | 0.10 | 1.05            | 1.05      | -0.065    | 0.010     | 0.039            | 0.039 | 0.028 | 0.019 |
| 0.20  | 0.10 | 1.06            | 1.06      | -0.060    | 0.011     | 0.034            | 0.034 | 0.022 | 0.017 |
| 0.30  | 0.10 | 1.05            | 1.05      | -0.058    | 0.006     | 0.039            | 0.039 | 0.031 | 0.023 |
| 0.40  | 0.10 | 1.04            | 1.04      | -0.052    | 0.005     | 0.034            | 0.034 | 0.032 | 0.023 |
| 0.50  | 0.10 | 1.04            | 1.04      | -0.050    | 0.000     | 0.034            | 0.034 | 0.031 | 0.028 |
| 0.60  | 0.10 | 1.04            | 1.04      | -0.047    | -0.002    | 0.034            | 0.034 | 0.031 | 0.023 |
| 0.70  | 0.10 | 1.02            | 1.02      | -0.034    | -0.010    | 0.039            | 0.039 | 0.028 | 0.026 |
| 0.80  | 0.10 | 1.03            | 1.03      | -0.021    | -0.013    | 0.037            | 0.037 | 0.032 | 0.034 |
| 0.80  | 0.20 | 1.02            | 1.02      | -0.028    | -0.013    | 0.041            | 0.042 | 0.057 | 0.029 |
| 0.70  | 0.20 | 1.03            | 1.03      | -0.036    | -0.008    | 0.036            | 0.036 | 0.032 | 0.023 |
| 0.60  | 0.20 | 1.03            | 1.03      | -0.042    | -0.002    | 0.034            | 0.036 | 0.037 | 0.021 |
| 0.50  | 0.20 | 1.04            | 1.04      | -0.047    | 0.000     | 0.042            | 0.042 | 0.031 | 0.024 |
| 0.40  | 0.20 | 1.04            | 1.04      | -0.052    | 0.006     | 0.031            | 0.031 | 0.032 | 0.023 |
| 0.30  | 0.20 | 1.05            | 1.05      | -0.057    | 0.006     | 0.034            | 0.034 | 0.034 | 0.021 |
| 0.20  | 0.20 | 1.07            | 1.06      | -0.060    | 0.008     | 0.050            | 0.050 | 0.032 | 0.027 |
| 0.10  | 0.20 | 1.06            | 1.05      | -0.063    | 0.003     | 0.044            | 0.044 | 0.036 | 0.028 |
| 0.00  | 0.20 | 1.08            | 1.08      | -0.065    | 0.006     | 0.037            | 0.037 | 0.029 | 0.026 |
| -0.05 | 0.20 | 1.08            | 1.08      | -0.067    | 0.008     | 0.050            | 0.050 | 0.034 | 0.021 |
| -0.10 | 0.10 | 1.07            | 1.07      | -0.067    | 0.008     | 0.037            | 0.037 | 0.032 | 0.023 |
| -0.15 | 0.20 | 1.07            | 1.07      | -0.065    | 0.008     | 0.039            | 0.039 | 0.029 | 0.024 |
| -0.20 | 0.10 | 1.10            | 1.09      | -0.071    | 0.005     | 0.031            | 0.031 | 0.034 | 0.024 |
| -0.25 | 0.10 | 1.09            | 1.09      | -0.063    | 0.000     | 0.034            | 0.034 | 0.032 | 0.020 |
| -0.30 | 0.10 | 1.11            | 1.10      | -0.067    | 0.003     | 0.039            | 0.039 | 0.028 | 0.028 |
| -0.35 | 0.10 | 1.10            | 1.09      | -0.062    | 0.000     | 0.042            | 0.042 | 0.034 | 0.023 |
| -0.40 | 0.20 | 1.11            | 1.11      | -0.052    | 0.000     | 0.041            | 0.041 | 0.029 | 0.026 |
| -0.45 | 0.20 | 1.12            | 1.11      | -0.052    | 0.003     | 0.037            | 0.039 | 0.036 | 0.026 |
| -0.50 | 0.20 | 1.12            | 1.12      | -0.049    | 0.008     | 0.037            | 0.037 | 0.031 | 0.021 |
| -0.55 | 0.20 | 1.12            | 1.12      | -0.045    | 0.003     | 0.039            | 0.039 | 0.034 | 0.026 |
| -0.60 | 0.20 | 1.13            | 1.13      | -0.042    | 0.000     | 0.034            | 0.034 | 0.032 | 0.026 |
| -0.65 | 0.20 | 1.14            | 1.14      | -0.037    | 0.000     | 0.034            | 0.034 | 0.041 | 0.018 |
| -0.70 | 0.20 | 1.15            | 1.15      | -0.034    | -0.002    | 0.032            | 0.032 | 0.029 | 0.023 |
| -0.75 | 0.20 | 1.12            | 1.12      | -0.031    | 0.000     | 0.036            | 0.036 | 0.034 | 0.023 |
| -0.80 | 0.20 | 1.13            | 1.13      | -0.024    | -0.008    | 0.034            | 0.034 | 0.044 | 0.031 |
| -0.80 | 0.30 | 1.13            | 1.13      | -0.019    | -0.006    | 0.034            | 0.034 | 0.031 | 0.024 |
| -0.75 | 0.30 | 1.14            | 1.14      | -0.028    | -0.002    | 0.049            | 0.049 | 0.031 | 0.023 |
| -0.70 | 0.30 | 1.14            | 1.14      | -0.024    | 0.000     | 0.034            | 0.034 | 0.031 | 0.024 |
| -0.65 | 0.30 | 1.14            | 1.14      | -0.037    | 0.002     | 0.034            | 0.034 | 0.029 | 0.026 |
| -0.60 | 0.30 | 1.13            | 1.13      | -0.041    | 0.002     | 0.045            | 0.045 | 0.031 | 0.028 |
| -0.55 | 0.30 | 1.13            | 1.13      | -0.044    | 0.002     | 0.037            | 0.037 | 0.031 | 0.024 |
| -0.50 | 0.30 | 1.12            | 1.12      | -0.045    | 0.000     | 0.044            | 0.044 | 0.031 | 0.028 |
| -0.47 | 0.30 | 1.12            | 1.12      | -0.049    | 0.005     | 0.045            | 0.045 | 0.029 | 0.024 |
| -0.40 | 0.30 | 1.12            | 1.12      | -0.066    | 0.000     | 0.055            | 0.055 | 0.029 | 0.026 |
| -0.35 | 0.30 | 1.11            | 1.10      | -0.067    | 0.000     | 0.067            | 0.067 | 0.031 | 0.035 |
| -0.30 | 0.30 | 1.14            | 1.14      | -0.069    | -0.003    | 0.053            | 0.053 | 0.033 | 0.036 |
| -0.25 | 0.30 | 1.13            | 1.17      | -0.071    | -0.005    | 0.055            | 0.057 | 0.028 | 0.038 |
| -0.20 | 0.30 | 1.13            | 1.13      | -0.071    | 0.000     | 0.057            | 0.057 | 0.031 | 0.025 |
| -0.15 | 0.30 | 1.13            | 1.12      | -0.069    | -0.002    | 0.060            | 0.060 | 0.029 | 0.033 |
| -0.10 | 0.30 | 1.10            | 1.09      | -0.069    | 0.000     | 0.053            | 0.055 | 0.029 | 0.033 |
| -0.05 | 0.30 | 1.09            | 1.09      | -0.071    | 0.002     | 0.052            | 0.053 | 0.026 | 0.027 |
| 0.00  | 0.30 | 1.10            | 1.09      | -0.069    | -0.002    | 0.060            | 0.060 | 0.029 | 0.028 |
| 0.10  | 0.30 | 1.08            | 1.08      | -0.067    | 0.000     | 0.040            | 0.050 | 0.028 | 0.026 |
| 0.20  | 0.30 | 1.09            | 1.08      | -0.071    | 0.005     | 0.052            | 0.052 | 0.029 | 0.026 |
| 0.30  | 0.30 | 1.06            | 1.06      | -0.066    | -0.002    | 0.040            | 0.048 | 0.026 | 0.025 |
| 0.40  | 0.30 | 1.07            | 1.07      | -0.062    | -0.002    | 0.048            | 0.048 | 0.024 | 0.025 |
| 0.50  | 0.30 | 1.06            | 1.06      | -0.057    | 0.002     | 0.057            | 0.057 | 0.026 | 0.020 |
| 0.60  | 0.30 | 1.07            | 1.07      | -0.048    | -0.007    | 0.047            | 0.047 | 0.028 | 0.023 |
| 0.70  | 0.30 | 1.06            | 1.06      | -0.047    | -0.009    | 0.055            | 0.055 | 0.031 | 0.031 |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.30 | 1.03            | 1.03      | -0.036    | -0.016    | 0.057      | 0.057 | 0.033 | 0.036 |
| 0.80  | 0.40 | 1.03            | 1.03      | -0.036    | -0.036    | 0.060      | 0.062 | 0.031 | 0.053 |
| 0.75  | 0.40 | 1.05            | 1.05      | -0.040    | -0.022    | 0.059      | 0.059 | 0.031 | 0.040 |
| 0.70  | 0.40 | 1.04            | 1.04      | -0.041    | -0.014    | 0.066      | 0.066 | 0.031 | 0.035 |
| 0.65  | 0.40 | 1.05            | 1.05      | -0.045    | -0.005    | 0.064      | 0.064 | 0.031 | 0.028 |
| 0.60  | 0.40 | 1.05            | 1.05      | -0.047    | -0.005    | 0.067      | 0.067 | 0.031 | 0.029 |
| 0.55  | 0.40 | 1.06            | 1.06      | -0.052    | 0.000     | 0.064      | 0.064 | 0.035 | 0.029 |
| 0.50  | 0.40 | 1.05            | 1.05      | -0.052    | -0.002    | 0.064      | 0.064 | 0.031 | 0.031 |
| 0.45  | 0.40 | 1.06            | 1.06      | -0.057    | 0.000     | 0.076      | 0.076 | 0.029 | 0.028 |
| 0.40  | 0.40 | 1.07            | 1.07      | -0.057    | 0.000     | 0.066      | 0.066 | 0.033 | 0.026 |
| 0.30  | 0.40 | 1.07            | 1.06      | -0.062    | 0.003     | 0.067      | 0.067 | 0.031 | 0.022 |
| 0.20  | 0.40 | 1.10            | 1.10      | -0.067    | 0.000     | 0.078      | 0.078 | 0.029 | 0.035 |
| 0.10  | 0.40 | 1.11            | 1.10      | -0.069    | 0.005     | 0.060      | 0.060 | 0.031 | 0.031 |
| 0.00  | 0.40 | 1.09            | 1.09      | -0.064    | 0.010     | 0.060      | 0.062 | 0.029 | 0.026 |
| -0.05 | 0.40 | 1.09            | 1.09      | -0.067    | 0.009     | 0.059      | 0.059 | 0.033 | 0.029 |
| -0.10 | 0.40 | 1.09            | 1.09      | -0.064    | 0.009     | 0.071      | 0.071 | 0.035 | 0.028 |
| -0.15 | 0.40 | 1.14            | 1.13      | -0.067    | 0.005     | 0.066      | 0.066 | 0.033 | 0.029 |
| -0.20 | 0.40 | 1.10            | 1.10      | -0.071    | 0.005     | 0.078      | 0.079 | 0.033 | 0.027 |
| -0.25 | 0.40 | 1.11            | 1.11      | -0.067    | 0.002     | 0.060      | 0.060 | 0.035 | 0.029 |
| -0.30 | 0.40 | 1.13            | 1.13      | -0.066    | 0.002     | 0.060      | 0.060 | 0.033 | 0.028 |
| -0.35 | 0.40 | 1.12            | 1.12      | -0.069    | 0.000     | 0.062      | 0.062 | 0.035 | 0.029 |
| -0.40 | 0.40 | 1.13            | 1.13      | -0.072    | 0.002     | 0.071      | 0.071 | 0.033 | 0.035 |
| -0.45 | 0.40 | 1.15            | 1.15      | -0.066    | 0.000     | 0.060      | 0.060 | 0.036 | 0.031 |
| -0.50 | 0.40 | 1.13            | 1.13      | -0.066    | 0.000     | 0.072      | 0.072 | 0.035 | 0.035 |
| -0.55 | 0.40 | 1.15            | 1.14      | -0.062    | 0.002     | 0.069      | 0.069 | 0.033 | 0.029 |
| -0.60 | 0.40 | 1.16            | 1.15      | -0.053    | -0.002    | 0.060      | 0.060 | 0.033 | 0.031 |
| -0.65 | 0.40 | 1.14            | 1.14      | -0.053    | 0.002     | 0.067      | 0.067 | 0.036 | 0.026 |
| -0.70 | 0.40 | 1.17            | 1.17      | -0.052    | -0.003    | 0.067      | 0.067 | 0.033 | 0.036 |
| -0.75 | 0.40 | 1.18            | 1.18      | -0.041    | -0.009    | 0.064      | 0.064 | 0.038 | 0.036 |
| -0.80 | 0.40 | 1.18            | 1.18      | -0.038    | -0.017    | 0.065      | 0.065 | 0.033 | 0.036 |
| -0.80 | 0.50 | 1.19            | 1.19      | -0.043    | -0.012    | 0.072      | 0.072 | 0.036 | 0.031 |
| -0.75 | 0.50 | 1.18            | 1.18      | -0.043    | -0.010    | 0.083      | 0.083 | 0.038 | 0.037 |
| -0.70 | 0.50 | 1.15            | 1.15      | -0.046    | -0.007    | 0.071      | 0.071 | 0.034 | 0.036 |
| -0.65 | 0.50 | 1.17            | 1.16      | -0.053    | -0.002    | 0.062      | 0.064 | 0.034 | 0.034 |
| -0.60 | 0.50 | 1.18            | 1.18      | -0.065    | 0.005     | 0.069      | 0.069 | 0.038 | 0.031 |
| -0.55 | 0.50 | 1.17            | 1.17      | -0.069    | 0.000     | 0.062      | 0.067 | 0.034 | 0.034 |
| -0.50 | 0.50 | 1.17            | 1.13      | -0.069    | 0.002     | 0.062      | 0.062 | 0.034 | 0.033 |
| -0.45 | 0.50 | 1.15            | 1.15      | -0.069    | 0.002     | 0.089      | 0.089 | 0.033 | 0.033 |
| -0.40 | 0.50 | 1.14            | 1.14      | -0.076    | 0.000     | 0.058      | 0.058 | 0.033 | 0.034 |
| -0.35 | 0.50 | 1.14            | 1.13      | -0.076    | 0.002     | 0.060      | 0.060 | 0.033 | 0.036 |
| -0.30 | 0.50 | 1.12            | 1.12      | -0.071    | -0.002    | 0.055      | 0.055 | 0.038 | 0.034 |
| -0.25 | 0.50 | 1.11            | 1.11      | -0.074    | 0.010     | 0.060      | 0.060 | 0.036 | 0.024 |
| -0.20 | 0.50 | 1.09            | 1.09      | -0.069    | 0.010     | 0.067      | 0.067 | 0.033 | 0.031 |
| 0.15  | 0.50 | 1.10            | 1.07      | -0.069    | 0.014     | 0.064      | 0.064 | 0.034 | 0.024 |
| -0.10 | 0.50 | 1.09            | 1.09      | -0.072    | 0.009     | 0.074      | 0.074 | 0.033 | 0.031 |
| -0.05 | 0.50 | 1.08            | 1.08      | -0.071    | 0.009     | 0.083      | 0.083 | 0.031 | 0.033 |
| 0.00  | 0.50 | 1.11            | 1.10      | -0.067    | 0.007     | 0.067      | 0.067 | 0.033 | 0.038 |
| 0.10  | 0.50 | 1.11            | 1.11      | -0.065    | 0.003     | 0.088      | 0.088 | 0.033 | 0.036 |
| 0.20  | 0.50 | 1.08            | 1.08      | -0.065    | 0.009     | 0.058      | 0.058 | 0.036 | 0.026 |
| 0.30  | 0.50 | 1.08            | 1.08      | -0.064    | 0.005     | 0.057      | 0.057 | 0.034 | 0.029 |
| 0.40  | 0.50 | 1.07            | 1.06      | -0.055    | -0.002    | 0.069      | 0.069 | 0.034 | 0.031 |
| 0.45  | 0.50 | 1.05            | 1.05      | -0.052    | -0.007    | 0.062      | 0.067 | 0.034 | 0.034 |
| 0.50  | 0.50 | 1.04            | 1.04      | -0.046    | -0.015    | 0.071      | 0.071 | 0.034 | 0.033 |
| 0.55  | 0.50 | 1.04            | 1.04      | -0.043    | -0.019    | 0.060      | 0.060 | 0.033 | 0.034 |
| 0.60  | 0.50 | 1.04            | 1.04      | -0.043    | -0.028    | 0.081      | 0.081 | 0.034 | 0.043 |
| 0.65  | 0.50 | 1.03            | 1.03      | -0.036    | -0.029    | 0.071      | 0.071 | 0.034 | 0.038 |
| 0.70  | 0.50 | 1.02            | 1.02      | -0.036    | -0.041    | 0.067      | 0.069 | 0.031 | 0.046 |
| 0.75  | 0.50 | 1.02            | 1.02      | -0.034    | -0.033    | 0.069      | 0.069 | 0.031 | 0.040 |
| 0.80  | 0.50 | 1.00            | 1.00      | -0.031    | -0.036    | 0.091      | 0.091 | 0.033 | 0.041 |
| 0.80  | 0.60 | 0.98            | 0.98      | -0.026    | -0.026    | 0.053      | 0.055 | 0.031 | 0.034 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.75     | 0.60     | 0.99            | 0.98      | -0.026    | -0.028    | 0.064      | 0.064 | 0.034 | 0.034 |
| 0.70     | 0.60     | 0.99            | 0.99      | -0.029    | -0.028    | 0.060      | 0.060 | 0.034 | 0.036 |
| 0.65     | 0.60     | 0.98            | 0.98      | -0.034    | -0.028    | 0.048      | 0.048 | 0.031 | 0.038 |
| 0.60     | 0.60     | 0.99            | 0.98      | -0.041    | -0.024    | 0.050      | 0.050 | 0.033 | 0.038 |
| 0.55     | 0.60     | 0.98            | 0.98      | -0.048    | -0.021    | 0.057      | 0.057 | 0.036 | 0.031 |
| 0.50     | 0.60     | 0.99            | 0.99      | -0.046    | -0.028    | 0.077      | 0.077 | 0.034 | 0.036 |
| 0.45     | 0.60     | 1.01            | 1.01      | -0.052    | -0.021    | 0.069      | 0.071 | 0.034 | 0.036 |
| 0.40     | 0.60     | 1.01            | 1.01      | -0.055    | -0.017    | 0.055      | 0.055 | 0.031 | 0.031 |
| 0.30     | 0.60     | 1.04            | 1.03      | -0.055    | -0.010    | 0.077      | 0.077 | 0.033 | 0.031 |
| 0.20     | 0.60     | 1.06            | 1.06      | -0.055    | -0.002    | 0.057      | 0.057 | 0.033 | 0.026 |
| 0.10     | 0.60     | 1.10            | 1.10      | -0.064    | -0.003    | 0.055      | 0.055 | 0.034 | 0.022 |
| 0.00     | 0.60     | 1.10            | 1.10      | -0.060    | -0.007    | 0.081      | 0.081 | 0.034 | 0.031 |
| -0.05    | 0.60     | 1.11            | 1.10      | -0.066    | 0.008     | 0.051      | 0.051 | 0.040 | 0.025 |
| -0.10    | 0.60     | 1.09            | 1.09      | -0.062    | 0.010     | 0.051      | 0.051 | 0.035 | 0.027 |
| -0.15    | 0.60     | 1.10            | 1.10      | -0.064    | 0.008     | 0.064      | 0.064 | 0.034 | 0.027 |
| -0.20    | 0.60     | 1.12            | 1.12      | -0.066    | 0.005     | 0.062      | 0.062 | 0.032 | 0.027 |
| -0.25    | 0.60     | 1.10            | 1.10      | -0.066    | 0.002     | 0.064      | 0.064 | 0.034 | 0.025 |
| -0.30    | 0.60     | 1.12            | 1.11      | -0.067    | -0.003    | 0.051      | 0.051 | 0.034 | 0.025 |
| -0.35    | 0.60     | 1.10            | 1.10      | -0.064    | -0.002    | 0.059      | 0.059 | 0.032 | 0.024 |
| -0.40    | 0.60     | 1.11            | 1.11      | -0.062    | 0.005     | 0.054      | 0.054 | 0.032 | 0.022 |
| -0.45    | 0.60     | 1.12            | 1.12      | -0.062    | 0.000     | 0.061      | 0.061 | 0.034 | 0.022 |
| -0.50    | 0.60     | 1.13            | 1.12      | -0.057    | 0.002     | 0.046      | 0.046 | 0.034 | 0.025 |
| -0.55    | 0.60     | 1.16            | 1.16      | -0.054    | 0.000     | 0.057      | 0.057 | 0.034 | 0.029 |
| -0.60    | 0.60     | 1.16            | 1.15      | -0.047    | 0.000     | 0.059      | 0.059 | 0.034 | 0.029 |
| -0.65    | 0.60     | 1.16            | 1.16      | -0.042    | -0.002    | 0.040      | 0.042 | 0.035 | 0.025 |
| -0.70    | 0.60     | 1.16            | 1.15      | -0.039    | -0.003    | 0.057      | 0.057 | 0.030 | 0.025 |
| -0.75    | 0.60     | 1.17            | 1.17      | -0.032    | -0.005    | 0.054      | 0.054 | 0.035 | 0.027 |
| -0.80    | 0.60     | 1.18            | 1.17      | -0.032    | -0.008    | 0.049      | 0.049 | 0.030 | 0.029 |
| -0.80    | 0.70     | 1.18            | 1.18      | -0.037    | -0.005    | 0.047      | 0.047 | 0.035 | 0.029 |
| -0.75    | 0.70     | 1.17            | 1.17      | -0.035    | -0.005    | 0.047      | 0.049 | 0.030 | 0.030 |
| -0.70    | 0.70     | 1.16            | 1.16      | -0.039    | 0.000     | 0.046      | 0.046 | 0.030 | 0.024 |
| -0.65    | 0.70     | 1.16            | 1.15      | -0.046    | -0.002    | 0.042      | 0.044 | 0.034 | 0.027 |
| -0.60    | 0.70     | 1.14            | 1.13      | -0.049    | -0.002    | 0.046      | 0.046 | 0.034 | 0.029 |
| -0.55    | 0.70     | 1.13            | 1.13      | -0.054    | -0.003    | 0.044      | 0.044 | 0.032 | 0.029 |
| -0.50    | 0.70     | 1.14            | 1.13      | -0.062    | 0.000     | 0.051      | 0.051 | 0.034 | 0.025 |
| -0.45    | 0.70     | 1.13            | 1.13      | -0.061    | 0.002     | 0.052      | 0.052 | 0.030 | 0.024 |
| -0.40    | 0.70     | 1.11            | 1.11      | -0.064    | 0.002     | 0.052      | 0.052 | 0.029 | 0.025 |
| -0.35    | 0.70     | 1.11            | 1.10      | -0.067    | -0.003    | 0.047      | 0.047 | 0.035 | 0.027 |
| -0.30    | 0.70     | 1.04            | 1.03      | -0.061    | -0.002    | 0.071      | 0.072 | 0.032 | 0.024 |
| -0.25    | 0.70     | 1.04            | 1.04      | -0.071    | 0.000     | 0.091      | 0.091 | 0.032 | 0.027 |
| -0.20    | 0.70     | 1.09            | 1.09      | -0.064    | 0.008     | 0.049      | 0.049 | 0.032 | 0.029 |
| -0.15    | 0.70     | 1.07            | 1.07      | -0.064    | 0.010     | 0.051      | 0.051 | 0.035 | 0.030 |
| -0.10    | 0.70     | 1.04            | 1.04      | -0.057    | 0.003     | 0.062      | 0.062 | 0.029 | 0.037 |
| -0.05    | 0.70     | 1.03            | 1.03      | -0.062    | 0.005     | 0.059      | 0.059 | 0.032 | 0.030 |
| 0.00     | 0.70     | 1.01            | 1.01      | -0.064    | -0.005    | 0.054      | 0.054 | 0.034 | 0.032 |
| 0.10     | 0.70     | 0.99            | 0.98      | -0.059    | -0.008    | 0.051      | 0.052 | 0.032 | 0.034 |
| 0.20     | 0.70     | 0.98            | 0.98      | -0.057    | -0.017    | 0.052      | 0.052 | 0.039 | 0.032 |
| 0.30     | 0.70     | 0.96            | 0.96      | -0.057    | -0.020    | 0.067      | 0.067 | 0.035 | 0.037 |
| 0.40     | 0.70     | 0.97            | 0.96      | -0.054    | -0.017    | 0.059      | 0.059 | 0.034 | 0.032 |
| 0.45     | 0.70     | 0.90            | 0.89      | -0.047    | -0.013    | 0.113      | 0.113 | 0.034 | 0.029 |
| 0.50     | 0.70     | 0.96            | 0.96      | -0.044    | -0.017    | 0.072      | 0.072 | 0.034 | 0.032 |
| 0.55     | 0.70     | 0.97            | 0.97      | -0.044    | -0.015    | 0.054      | 0.054 | 0.034 | 0.035 |
| 0.60     | 0.70     | 0.98            | 0.98      | -0.040    | -0.015    | 0.051      | 0.051 | 0.032 | 0.027 |
| 0.65     | 0.70     | 0.97            | 0.97      | -0.034    | -0.015    | 0.051      | 0.051 | 0.024 | 0.030 |
| 0.70     | 0.70     | 0.98            | 0.98      | -0.036    | -0.012    | 0.048      | 0.048 | 0.031 | 0.029 |
| 0.80     | 0.70     | 0.96            | 0.96      | -0.024    | -0.015    | 0.054      | 0.056 | 0.037 | 0.037 |
| 0.80     | 0.80     | 0.90            | 0.90      | -0.025    | -0.007    | 0.065      | 0.065 | 0.049 | 0.039 |
| 0.70     | 0.80     | 0.97            | 0.97      | -0.036    | -0.012    | 0.048      | 0.048 | 0.037 | 0.037 |
| 0.60     | 0.80     | 0.90            | 0.93      | -0.039    | -0.014    | 0.049      | 0.049 | 0.034 | 0.027 |
| 0.50     | 0.80     | 0.99            | 0.99      | -0.046    | -0.008    | 0.049      | 0.047 | 0.036 | 0.024 |

| <i>y</i> | <i>z</i> | $\bar{U}$ rms | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'$ rms | $u'$  | $v'$  | $w'$  |
|----------|----------|---------------|-----------|-----------|-----------|----------------|-------|-------|-------|
| 0.40     | 0.80     | 0.99          | 0.99      | -0.053    | -0.010    | 0.049          | 0.049 | 0.034 | 0.031 |
| 0.30     | 0.80     | 1.00          | 1.00      | -0.061    | -0.012    | 0.049          | 0.049 | 0.036 | 0.037 |
| 0.20     | 0.80     | 1.02          | 1.01      | -0.061    | -0.012    | 0.044          | 0.044 | 0.036 | 0.032 |
| 0.10     | 0.80     | 1.00          | 1.00      | -0.058    | -0.020    | 0.056          | 0.058 | 0.032 | 0.037 |
| 0.00     | 0.80     | 0.96          | 0.96      | -0.059    | -0.014    | 0.048          | 0.048 | 0.034 | 0.032 |
| -0.10    | 0.80     | 1.00          | 1.00      | -0.066    | -0.020    | 0.048          | 0.048 | 0.034 | 0.042 |
| -0.20    | 0.80     | 1.03          | 1.03      | -0.075    | -0.012    | 0.048          | 0.049 | 0.036 | 0.032 |
| -0.30    | 0.80     | 1.05          | 1.05      | -0.070    | -0.008    | 0.044          | 0.044 | 0.034 | 0.029 |
| -0.40    | 0.80     | 1.10          | 1.09      | -0.070    | -0.012    | 0.056          | 0.058 | 0.034 | 0.034 |
| -0.50    | 0.80     | 1.15          | 1.15      | -0.066    | 0.002     | 0.053          | 0.053 | 0.031 | 0.027 |
| -0.55    | 0.80     | 1.15          | 1.15      | -0.061    | 0.005     | 0.051          | 0.051 | 0.037 | 0.032 |
| -0.60    | 0.80     | 1.15          | 1.15      | -0.054    | 0.003     | 0.053          | 0.053 | 0.037 | 0.024 |
| -0.65    | 0.80     | 1.17          | 1.17      | -0.058    | 0.000     | 0.056          | 0.056 | 0.037 | 0.029 |
| -0.70    | 0.80     | 1.17          | 1.17      | -0.049    | 0.000     | 0.048          | 0.049 | 0.039 | 0.029 |
| -0.75    | 0.80     | 1.18          | 1.18      | -0.051    | -0.002    | 0.056          | 0.056 | 0.034 | 0.027 |
| -0.80    | 0.80     | 1.18          | 1.18      | -0.042    | 0.000     | 0.054          | 0.054 | 0.044 | 0.025 |
| -0.80    | 0.80     | 1.20          | 1.20      | -0.046    | -0.030    | 0.044          | 0.044 | 0.034 | 0.044 |
| -0.80    | 0.70     | 1.19          | 1.19      | -0.051    | -0.022    | 0.044          | 0.044 | 0.034 | 0.044 |
| -0.80    | 0.60     | 1.20          | 1.19      | -0.040    | -0.027    | 0.049          | 0.049 | 0.032 | 0.047 |
| -0.80    | 0.50     | 1.19          | 1.19      | -0.044    | -0.024    | 0.040          | 0.042 | 0.032 | 0.037 |
| -0.80    | 0.40     | 1.18          | 1.17      | -0.044    | -0.034    | 0.056          | 0.057 | 0.027 | 0.042 |
| -0.80    | 0.30     | 1.17          | 1.17      | -0.047    | -0.030    | 0.047          | 0.047 | 0.032 | 0.046 |
| -0.80    | 0.20     | 1.18          | 1.18      | -0.044    | -0.013    | 0.056          | 0.056 | 0.032 | 0.037 |
| -0.80    | 0.10     | 1.16          | 1.16      | -0.037    | -0.030    | 0.047          | 0.049 | 0.030 | 0.047 |
| -0.80    | 0.00     | 1.15          | 1.15      | -0.039    | -0.022    | 0.049          | 0.049 | 0.024 | 0.044 |
| -0.80    | -0.10    | 1.15          | 1.15      | -0.044    | -0.034    | 0.040          | 0.040 | 0.034 | 0.044 |
| -0.80    | -0.20    | 1.18          | 1.17      | -0.042    | -0.027    | 0.046          | 0.046 | 0.034 | 0.042 |
| -0.80    | -0.30    | 1.18          | 1.18      | -0.046    | -0.039    | 0.052          | 0.054 | 0.037 | 0.044 |
| -0.80    | -0.40    | 1.18          | 1.18      | -0.040    | -0.024    | 0.044          | 0.044 | 0.030 | 0.044 |
| -0.80    | -0.50    | 1.18          | 1.17      | -0.042    | -0.024    | 0.056          | 0.057 | 0.032 | 0.042 |
| -0.80    | -0.60    | 1.18          | 1.18      | -0.044    | -0.024    | 0.049          | 0.049 | 0.035 | 0.040 |
| -0.80    | -0.70    | 1.17          | 1.17      | -0.037    | -0.005    | 0.057          | 0.057 | 0.035 | 0.037 |
| -0.80    | -0.80    | 1.17          | 1.17      | -0.049    | -0.017    | 0.067          | 0.067 | 0.039 | 0.042 |
| -0.90    | 0.80     | 1.19          | 1.19      | -0.042    | -0.024    | 0.061          | 0.063 | 0.058 | 0.048 |
| -0.90    | 0.70     | 1.19          | 1.19      | -0.036    | -0.029    | 0.053          | 0.054 | 0.041 | 0.046 |
| -0.90    | 0.60     | 1.22          | 1.22      | -0.037    | -0.032    | 0.056          | 0.058 | 0.051 | 0.037 |
| -0.90    | 0.50     | 1.18          | 1.18      | -0.025    | -0.041    | 0.056          | 0.058 | 0.042 | 0.039 |
| -0.90    | 0.40     | 1.22          | 1.21      | -0.032    | -0.042    | 0.056          | 0.056 | 0.034 | 0.044 |
| -0.90    | 0.30     | 1.21          | 1.20      | -0.025    | -0.061    | 0.049          | 0.051 | 0.034 | 0.056 |
| -0.90    | 0.20     | 1.21          | 1.20      | -0.029    | -0.041    | 0.066          | 0.066 | 0.044 | 0.039 |
| -0.90    | 0.10     | 1.20          | 1.19      | -0.031    | -0.027    | 0.041          | 0.041 | 0.032 | 0.041 |
| -0.90    | 0.00     | 1.19          | 1.19      | -0.039    | -0.031    | 0.037          | 0.037 | 0.036 | 0.036 |
| -0.90    | -0.10    | 1.20          | 1.20      | -0.024    | -0.037    | 0.054          | 0.056 | 0.037 | 0.047 |
| -0.90    | -0.20    | 1.20          | 1.20      | -0.024    | -0.036    | 0.051          | 0.053 | 0.036 | 0.047 |
| -0.90    | -0.30    | 1.19          | 1.19      | -0.037    | -0.031    | 0.054          | 0.054 | 0.034 | 0.039 |
| -0.90    | -0.40    | 1.20          | 1.20      | -0.029    | -0.025    | 0.053          | 0.053 | 0.032 | 0.042 |
| -0.90    | -0.50    | 1.19          | 1.19      | -0.027    | -0.020    | 0.054          | 0.054 | 0.031 | 0.039 |
| -0.90    | -0.60    | 1.21          | 1.21      | -0.025    | -0.014    | 0.051          | 0.051 | 0.037 | 0.036 |
| -0.90    | -0.70    | 1.17          | 1.17      | -0.036    | -0.022    | 0.049          | 0.049 | 0.042 | 0.042 |
| -0.90    | -0.80    | 1.11          | 1.11      | -0.020    | 0.007     | 0.090          | 0.090 | 0.053 | 0.053 |
| -0.93    | 0.80     | 1.18          | 1.18      | -0.024    | -0.010    | 0.083          | 0.083 | 0.063 | 0.046 |
| -0.93    | 0.70     | 1.19          | 1.18      | -0.036    | -0.029    | 0.052          | 0.052 | 0.046 | 0.044 |
| -0.93    | 0.60     | 1.19          | 1.18      | -0.030    | -0.036    | 0.057          | 0.057 | 0.046 | 0.049 |
| -0.93    | 0.50     | 1.19          | 1.19      | -0.029    | -0.036    | 0.054          | 0.054 | 0.049 | 0.049 |
| -0.93    | 0.40     | 1.20          | 1.20      | -0.022    | -0.030    | 0.052          | 0.052 | 0.034 | 0.041 |
| -0.93    | 0.30     | 1.16          | 1.16      | -0.024    | -0.044    | 0.064          | 0.066 | 0.044 | 0.047 |
| -0.93    | 0.20     | 1.21          | 1.21      | -0.022    | -0.041    | 0.057          | 0.057 | 0.030 | 0.041 |
| -0.93    | 0.10     | 1.19          | 1.19      | -0.032    | -0.029    | 0.052          | 0.052 | 0.034 | 0.037 |
| -0.93    | 0.00     | 1.17          | 1.17      | -0.036    | -0.047    | 0.063          | 0.063 | 0.046 | 0.041 |
| -0.93    | -0.10    | 1.19          | 1.19      | -0.034    | -0.030    | 0.051          | 0.051 | 0.027 | 0.044 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.93 | -0.20 | 1.17            | 1.17      | -0.024    | -0.042    | 0.056      | 0.057 | 0.036 | 0.052 |
| -0.93 | -0.30 | 1.21            | 1.21      | -0.032    | -0.034    | 0.052      | 0.052 | 0.036 | 0.049 |
| -0.93 | -0.40 | 1.20            | 1.20      | -0.017    | -0.022    | 0.052      | 0.052 | 0.042 | 0.037 |
| -0.93 | -0.50 | 1.20            | 1.20      | -0.029    | -0.024    | 0.054      | 0.052 | 0.036 | 0.032 |
| -0.93 | -0.60 | 1.17            | 1.17      | -0.027    | -0.015    | 0.057      | 0.057 | 0.037 | 0.042 |
| -0.93 | -0.70 | 1.19            | 1.19      | -0.027    | -0.010    | 0.059      | 0.059 | 0.046 | 0.042 |
| -0.93 | -0.80 | 1.12            | 1.12      | -0.028    | -0.012    | 0.059      | 0.059 | 0.046 | 0.042 |
| -0.95 | 0.80  | 1.14            | 1.14      | -0.005    | -0.005    | 0.066      | 0.066 | 0.058 | 0.047 |
| -0.95 | 0.70  | 1.20            | 1.20      | -0.029    | -0.025    | 0.059      | 0.059 | 0.063 | 0.056 |
| -0.95 | 0.60  | 1.20            | 1.20      | -0.019    | -0.012    | 0.063      | 0.064 | 0.044 | 0.036 |
| -0.95 | 0.50  | 1.21            | 1.20      | -0.024    | -0.027    | 0.064      | 0.064 | 0.051 | 0.041 |
| -0.95 | 0.40  | 1.20            | 1.20      | -0.012    | -0.034    | 0.058      | 0.058 | 0.039 | 0.044 |
| -0.95 | 0.30  | 1.23            | 1.23      | -0.020    | -0.027    | 0.059      | 0.059 | 0.032 | 0.044 |
| -0.95 | 0.20  | 1.21            | 1.20      | -0.024    | -0.024    | 0.051      | 0.052 | 0.044 | 0.034 |
| -0.95 | 0.10  | 1.20            | 1.19      | 0.000     | -0.030    | 0.076      | 0.078 | 0.054 | 0.036 |
| -0.95 | 0.00  | 1.22            | 1.21      | -0.046    | -0.020    | 0.068      | 0.069 | 0.046 | 0.032 |
| -0.95 | -0.10 | 1.22            | 1.22      | -0.017    | -0.039    | 0.052      | 0.052 | 0.047 | 0.047 |
| -0.95 | -0.20 | 1.20            | 1.20      | -0.012    | -0.022    | 0.061      | 0.061 | 0.041 | 0.034 |
| -0.95 | -0.30 | 1.22            | 1.22      | -0.022    | -0.022    | 0.056      | 0.056 | 0.034 | 0.024 |
| -0.95 | -0.40 | 1.22            | 1.22      | -0.020    | -0.024    | 0.047      | 0.049 | 0.030 | 0.049 |
| -0.95 | -0.50 | 1.21            | 1.21      | -0.022    | -0.014    | 0.069      | 0.069 | 0.052 | 0.034 |
| -0.95 | -0.60 | 1.19            | 1.19      | -0.014    | -0.002    | 0.056      | 0.056 | 0.064 | 0.025 |
| -0.95 | -0.70 | 1.15            | 1.15      | -0.002    | -0.005    | 0.080      | 0.080 | 0.076 | 0.039 |
| -0.95 | -0.80 | 1.09            | 1.09      | -0.019    | -0.002    | 0.091      | 0.091 | 0.051 | 0.047 |
| -0.96 | 0.80  | 1.12            | 1.12      | -0.013    | -0.008    | 0.085      | 0.085 | 0.048 | 0.048 |
| -0.96 | 0.70  | 1.15            | 1.15      | -0.012    | -0.018    | 0.085      | 0.085 | 0.045 | 0.047 |
| -0.96 | 0.60  | 1.18            | 1.18      | -0.028    | -0.032    | 0.088      | 0.090 | 0.057 | 0.055 |
| -0.96 | 0.50  | 1.19            | 1.19      | -0.025    | -0.013    | 0.065      | 0.067 | 0.043 | 0.040 |
| -0.96 | 0.40  | 1.20            | 1.19      | -0.017    | -0.023    | 0.058      | 0.058 | 0.042 | 0.043 |
| -0.96 | 0.30  | 1.19            | 1.19      | -0.027    | -0.022    | 0.065      | 0.067 | 0.037 | 0.052 |
| -0.96 | 0.20  | 1.19            | 1.19      | -0.032    | -0.030    | 0.052      | 0.053 | 0.038 | 0.047 |
| -0.96 | 0.10  | 1.18            | 1.18      | -0.013    | -0.023    | 0.060      | 0.060 | 0.033 | 0.028 |
| -0.96 | 0.00  | 1.19            | 1.18      | -0.027    | -0.027    | 0.055      | 0.055 | 0.050 | 0.035 |
| -0.96 | -0.10 | 1.19            | 1.19      | -0.033    | -0.032    | 0.060      | 0.062 | 0.048 | 0.040 |
| -0.96 | -0.20 | 1.23            | 1.23      | -0.022    | -0.018    | 0.042      | 0.040 | 0.042 | 0.043 |
| -0.96 | -0.30 | 1.20            | 1.20      | -0.025    | -0.015    | 0.047      | 0.047 | 0.033 | 0.037 |
| -0.96 | -0.40 | 1.21            | 1.21      | -0.012    | -0.028    | 0.055      | 0.055 | 0.028 | 0.037 |
| -0.96 | -0.50 | 1.21            | 1.20      | -0.025    | -0.022    | 0.053      | 0.053 | 0.037 | 0.037 |
| -0.96 | -0.60 | 1.18            | 1.18      | -0.020    | -0.010    | 0.073      | 0.073 | 0.052 | 0.038 |
| -0.96 | -0.70 | 1.16            | 1.16      | -0.042    | -0.005    | 0.080      | 0.080 | 0.068 | 0.043 |
| -0.96 | -0.80 | 1.12            | 1.11      | -0.042    | -0.008    | 0.075      | 0.087 | 0.112 | 0.053 |
| 0.80  | 0.80  | 0.85            | 0.85      | -0.027    | -0.018    | 0.074      | 0.072 | 0.059 | 0.045 |
| 0.80  | 0.70  | 0.94            | 0.94      | -0.045    | -0.013    | 0.054      | 0.054 | 0.054 | 0.045 |
| 0.80  | 0.60  | 0.98            | 0.98      | -0.025    | -0.025    | 0.030      | 0.030 | 0.033 | 0.032 |
| 0.80  | 0.50  | 0.97            | 0.96      | -0.030    | -0.023    | 0.027      | 0.027 | 0.028 | 0.030 |
| 0.80  | 0.40  | 1.04            | 1.04      | -0.022    | -0.008    | 0.057      | 0.057 | 0.037 | 0.023 |
| 0.80  | 0.30  | 1.03            | 1.03      | -0.028    | -0.013    | 0.037      | 0.037 | 0.020 | 0.032 |
| 0.80  | 0.20  | 1.02            | 1.02      | -0.030    | -0.027    | 0.028      | 0.028 | 0.025 | 0.037 |
| 0.80  | 0.10  | 1.05            | 1.04      | -0.027    | -0.013    | 0.044      | 0.044 | 0.025 | 0.028 |
| 0.80  | 0.00  | 1.06            | 1.05      | -0.037    | -0.013    | 0.037      | 0.037 | 0.035 | 0.032 |
| 0.80  | -0.10 | 1.04            | 1.04      | -0.028    | -0.022    | 0.039      | 0.039 | 0.030 | 0.030 |
| 0.80  | -0.20 | 1.06            | 1.05      | -0.039    | -0.020    | 0.037      | 0.039 | 0.025 | 0.039 |
| 0.80  | -0.30 | 1.05            | 1.04      | -0.049    | -0.030    | 0.037      | 0.029 | 0.028 | 0.042 |
| 0.80  | -0.40 | 1.00            | 1.00      | -0.044    | -0.008    | 0.052      | 0.052 | 0.039 | 0.077 |
| 0.80  | -0.50 | 1.02            | 1.01      | -0.065    | -0.030    | 0.062      | 0.062 | 0.047 | 0.047 |
| 0.80  | -0.60 | 0.96            | 0.95      | -0.035    | -0.003    | 0.065      | 0.067 | 0.033 | 0.050 |
| 0.80  | -0.70 | 0.98            | 0.98      | -0.044    | -0.010    | 0.069      | 0.069 | 0.028 | 0.050 |
| 0.80  | -0.80 | 0.86            | 0.86      | -0.045    | -0.007    | 0.100      | 0.102 | 0.059 | 0.072 |
| 0.90  | 0.80  | 0.71            | 0.71      | -0.025    | -0.008    | 0.124      | 0.126 | 0.050 | 0.078 |
| 0.90  | 0.70  | 0.85            | 0.85      | -0.027    | -0.010    | 0.081      | 0.082 | 0.049 | 0.067 |

| <i>y</i> | <i>z</i> | <i>U</i><br>rms | <i>U</i> | <i>V</i> | <i>W</i> | <i>U'</i><br>rms | <i>u'</i> | <i>v'</i> | <i>w'</i> |
|----------|----------|-----------------|----------|----------|----------|------------------|-----------|-----------|-----------|
| 0.90     | 0.60     | 0.84            | 0.83     | -0.030   | -0.022   | 0.080            | 0.081     | 0.050     | 0.061     |
| 0.90     | 0.50     | 0.84            | 0.83     | -0.028   | -0.043   | 0.101            | 0.100     | 0.040     | 0.056     |
| 0.90     | 0.40     | 0.54            | 0.52     | -0.041   | -0.017   | 0.393            | 0.410     | 0.096     | 0.050     |
| 0.90     | 0.30     | 0.27            | 0.27     | -0.039   | 0.025    | 0.297            | 0.339     | 0.455     | 0.038     |
| 0.90     | 0.20     | 0.22            | 0.19     | -0.028   | -0.022   | 0.168            | 0.191     | 0.035     | 0.065     |
| 0.90     | 0.10     | 0.27            | 0.19     | -0.027   | -0.002   | 0.267            | 0.319     | 0.037     | 0.076     |
| 0.90     | 0.00     | 0.26            | 0.20     | -0.040   | -0.015   | 0.242            | 0.280     | 0.048     | 0.045     |
| 0.90     | -0.10    | 0.18            | 0.13     | -0.030   | 0.017    | 0.202            | 0.217     | 0.038     | 0.091     |
| 0.90     | -0.20    | 0.31            | 0.26     | -0.030   | 0.002    | 0.305            | 0.347     | 0.027     | 0.032     |
| 0.90     | -0.30    | 0.23            | 0.18     | -0.035   | -0.013   | 0.163            | 0.197     | 0.032     | 0.071     |
| 0.90     | -0.40    | 0.35            | 0.30     | -0.066   | -0.010   | 0.277            | 0.264     | 0.174     | 0.091     |
| 0.90     | -0.50    | 0.55            | 0.55     | -0.012   | -0.007   | 0.226            | 0.143     | 0.048     | 0.292     |
| 0.90     | -0.60    | 0.49            | 0.48     | -0.045   | -0.005   | 0.196            | 0.207     | 0.037     | 0.018     |
| 0.90     | -0.70    | 0.57            | 0.56     | -0.037   | 0.017    | 0.138            | 0.143     | 0.051     | 0.038     |
| 0.90     | -0.80    | 0.52            | 0.51     | -0.023   | -0.003   | 0.159            | 0.164     | 0.056     | 0.081     |

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Table C-3, Station 6,  $\theta = 30^\circ$

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U' rms</u> | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.80     | 0.00     | 0.90        | 0.90     | 0.009    | -0.007   | 0.045         | 0.045     | 0.047     | 0.038     |
| 0.70     | 0.00     | 0.92        | 0.92     | 0.014    | -0.010   | 0.047         | 0.047     | 0.038     | 0.028     |
| 0.60     | 0.00     | 0.94        | 0.93     | 0.017    | -0.003   | 0.041         | 0.041     | 0.034     | 0.022     |
| 0.50     | 0.00     | 0.95        | 0.95     | 0.016    | 0.002    | 0.043         | 0.043     | 0.038     | 0.019     |
| 0.40     | 0.00     | 0.98        | 0.98     | 0.022    | 0.003    | 0.048         | 0.048     | 0.033     | 0.022     |
| 0.30     | 0.00     | 1.01        | 1.01     | 0.028    | 0.000    | 0.045         | 0.045     | 0.038     | 0.024     |
| 0.20     | 0.00     | 1.02        | 1.02     | 0.019    | 0.002    | 0.041         | 0.041     | 0.033     | 0.019     |
| 0.10     | 0.00     | 1.02        | 1.02     | 0.024    | 0.002    | 0.045         | 0.047     | 0.034     | 0.024     |
| 0.00     | 0.00     | 1.05        | 1.05     | 0.029    | 0.003    | 0.045         | 0.045     | 0.033     | 0.024     |
| -0.10    | 0.00     | 1.08        | 1.08     | 0.029    | 0.000    | 0.043         | 0.043     | 0.033     | 0.022     |
| -0.20    | 0.00     | 1.08        | 1.08     | 0.033    | -0.002   | 0.043         | 0.043     | 0.034     | 0.028     |
| -0.30    | 0.00     | 1.11        | 1.10     | 0.038    | -0.009   | 0.043         | 0.043     | 0.034     | 0.026     |
| -0.40    | 0.00     | 1.12        | 1.12     | 0.029    | -0.007   | 0.041         | 0.041     | 0.034     | 0.026     |
| -0.50    | 0.00     | 1.17        | 1.17     | 0.031    | -0.014   | 0.043         | 0.043     | 0.038     | 0.031     |
| -0.55    | 0.00     | 1.17        | 1.17     | 0.022    | -0.014   | 0.040         | 0.040     | 0.034     | 0.026     |
| -0.60    | 0.00     | 1.18        | 1.18     | 0.026    | -0.014   | 0.036         | 0.036     | 0.031     | 0.024     |
| -0.65    | 0.00     | 1.20        | 1.20     | 0.028    | -0.016   | 0.045         | 0.045     | 0.031     | 0.028     |
| -0.70    | 0.00     | 1.23        | 1.22     | 0.031    | -0.019   | 0.048         | 0.048     | 0.038     | 0.036     |
| -0.75    | 0.00     | 1.24        | 1.23     | 0.022    | -0.021   | 0.041         | 0.043     | 0.036     | 0.038     |
| -0.80    | 0.00     | 1.23        | 1.22     | 0.016    | -0.019   | 0.043         | 0.043     | 0.033     | 0.029     |
| -0.80    | -0.10    | 1.24        | 1.24     | 0.021    | -0.019   | 0.047         | 0.047     | 0.033     | 0.036     |
| -0.75    | -0.10    | 1.22        | 1.21     | 0.017    | -0.012   | 0.045         | 0.045     | 0.033     | 0.026     |
| -0.70    | -0.10    | 1.21        | 1.21     | 0.019    | -0.012   | 0.047         | 0.047     | 0.034     | 0.033     |
| -0.65    | -0.10    | 1.20        | 1.20     | 0.026    | -0.012   | 0.045         | 0.045     | 0.033     | 0.031     |
| -0.60    | -0.10    | 1.19        | 1.19     | 0.028    | -0.014   | 0.047         | 0.047     | 0.034     | 0.034     |
| -0.55    | -0.10    | 1.18        | 1.18     | 0.022    | -0.010   | 0.041         | 0.041     | 0.036     | 0.029     |
| -0.50    | -0.10    | 1.16        | 1.16     | 0.031    | -0.009   | 0.045         | 0.045     | 0.038     | 0.028     |
| -0.40    | -0.10    | 1.14        | 1.13     | 0.033    | -0.009   | 0.043         | 0.043     | 0.033     | 0.029     |
| -0.30    | -0.10    | 1.11        | 1.11     | 0.038    | -0.005   | 0.047         | 0.047     | 0.034     | 0.028     |
| -0.20    | -0.10    | 1.09        | 1.09     | 0.033    | 0.003    | 0.041         | 0.041     | 0.036     | 0.024     |
| -0.10    | -0.10    | 1.06        | 1.06     | 0.033    | 0.002    | 0.043         | 0.043     | 0.031     | 0.022     |
| 0.00     | -0.10    | 1.04        | 1.04     | 0.029    | 0.000    | 0.047         | 0.047     | 0.033     | 0.026     |
| 0.10     | -0.10    | 1.01        | 1.01     | 0.015    | 0.007    | 0.044         | 0.044     | 0.034     | 0.024     |
| 0.20     | -0.10    | 1.01        | 1.01     | 0.015    | 0.002    | 0.041         | 0.041     | 0.034     | 0.025     |
| 0.30     | -0.10    | 0.99        | 0.99     | 0.007    | 0.008    | 0.042         | 0.042     | 0.034     | 0.019     |
| 0.40     | -0.10    | 0.96        | 0.96     | 0.014    | 0.000    | 0.042         | 0.042     | 0.034     | 0.024     |
| 0.50     | -0.10    | 0.95        | 0.94     | 0.005    | 0.002    | 0.039         | 0.039     | 0.032     | 0.019     |
| 0.60     | -0.10    | 0.93        | 0.93     | 0.007    | -0.005   | 0.041         | 0.041     | 0.036     | 0.022     |
| 0.70     | -0.10    | 0.91        | 0.90     | 0.003    | -0.012   | 0.044         | 0.044     | 0.042     | 0.025     |
| 0.80     | -0.10    | 0.88        | 0.88     | 0.010    | -0.019   | 0.046         | 0.046     | 0.047     | 0.041     |
| 0.80     | -0.20    | 0.87        | 0.86     | 0.015    | -0.022   | 0.056         | 0.056     | 0.044     | 0.041     |
| 0.70     | -0.20    | 0.92        | 0.92     | 0.010    | -0.017   | 0.046         | 0.046     | 0.039     | 0.029     |
| 0.60     | -0.20    | 0.94        | 0.93     | 0.002    | -0.012   | 0.044         | 0.044     | 0.039     | 0.027     |
| 0.50     | -0.20    | 0.96        | 0.96     | 0.007    | -0.002   | 0.039         | 0.039     | 0.034     | 0.019     |
| 0.40     | -0.20    | 0.97        | 0.97     | 0.010    | 0.007    | 0.041         | 0.041     | 0.036     | 0.022     |
| 0.30     | -0.20    | 0.99        | 0.99     | 0.017    | 0.005    | 0.042         | 0.042     | 0.037     | 0.019     |
| 0.20     | -0.20    | 1.02        | 1.02     | 0.015    | 0.005    | 0.042         | 0.042     | 0.036     | 0.024     |
| 0.10     | -0.20    | 1.04        | 1.04     | 0.014    | 0.003    | 0.041         | 0.041     | 0.032     | 0.027     |
| 0.00     | -0.20    | 1.07        | 1.07     | 0.014    | 0.005    | 0.044         | 0.044     | 0.037     | 0.024     |
| -0.10    | -0.20    | 1.09        | 1.09     | 0.020    | 0.003    | 0.042         | 0.042     | 0.034     | 0.027     |
| -0.20    | -0.20    | 1.11        | 1.10     | 0.020    | 0.000    | 0.046         | 0.046     | 0.034     | 0.025     |
| -0.30    | -0.20    | 1.13        | 1.13     | 0.019    | -0.003   | 0.041         | 0.041     | 0.032     | 0.024     |
| -0.40    | -0.20    | 1.16        | 1.16     | 0.024    | -0.007   | 0.044         | 0.044     | 0.036     | 0.029     |
| -0.50    | -0.20    | 1.18        | 1.18     | 0.025    | -0.008   | 0.044         | 0.046     | 0.034     | 0.025     |
| -0.55    | -0.20    | 1.20        | 1.20     | 0.020    | -0.010   | 0.042         | 0.042     | 0.036     | 0.032     |
| -0.60    | -0.20    | 1.20        | 1.20     | 0.025    | -0.015   | 0.042         | 0.042     | 0.036     | 0.032     |
| -0.65    | -0.20    | 1.21        | 1.20     | 0.027    | -0.015   | 0.046         | 0.046     | 0.032     | 0.032     |
| -0.70    | -0.20    | 1.22        | 1.22     | 0.022    | -0.017   | 0.041         | 0.041     | 0.036     | 0.032     |
| -0.75    | -0.20    | 1.24        | 1.23     | 0.024    | -0.017   | 0.042         | 0.042     | 0.036     | 0.034     |
| -0.80    | -0.20    | 1.25        | 1.25     | 0.015    | -0.022   | 0.046         | 0.046     | 0.034     | 0.032     |

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| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80    | -0.30    | 1.25            | 1.25      | 0.032     | -0.014    | 0.049      | 0.049 | 0.039 | 0.034 |
| -0.75    | -0.30    | 1.24            | 1.24      | 0.031     | -0.012    | 0.046      | 0.046 | 0.037 | 0.032 |
| -0.70    | -0.30    | 1.23            | 1.23      | 0.027     | -0.012    | 0.047      | 0.047 | 0.036 | 0.037 |
| -0.65    | -0.30    | 1.22            | 1.22      | 0.024     | -0.014    | 0.042      | 0.042 | 0.037 | 0.032 |
| -0.60    | -0.30    | 1.21            | 1.20      | 0.015     | -0.010    | 0.039      | 0.039 | 0.036 | 0.031 |
| -0.55    | -0.30    | 1.20            | 1.20      | 0.020     | -0.008    | 0.039      | 0.039 | 0.037 | 0.025 |
| -0.50    | -0.30    | 1.18            | 1.18      | 0.022     | -0.003    | 0.042      | 0.042 | 0.034 | 0.027 |
| -0.40    | -0.30    | 1.14            | 1.14      | 0.020     | 0.002     | 0.037      | 0.037 | 0.035 | 0.022 |
| -0.30    | -0.30    | 1.12            | 1.12      | 0.017     | 0.005     | 0.033      | 0.033 | 0.032 | 0.025 |
| -0.20    | -0.30    | 1.09            | 1.09      | 0.018     | 0.005     | 0.038      | 0.038 | 0.033 | 0.025 |
| -0.10    | -0.30    | 1.07            | 1.07      | 0.017     | 0.007     | 0.038      | 0.038 | 0.037 | 0.027 |
| 0.00     | -0.30    | 1.06            | 1.05      | 0.017     | 0.010     | 0.037      | 0.037 | 0.037 | 0.023 |
| 0.10     | -0.30    | 1.03            | 1.03      | 0.015     | 0.007     | 0.043      | 0.043 | 0.033 | 0.022 |
| 0.20     | -0.30    | 1.01            | 1.01      | 0.015     | 0.008     | 0.035      | 0.035 | 0.037 | 0.020 |
| 0.30     | -0.30    | 0.99            | 0.99      | 0.012     | 0.007     | 0.037      | 0.037 | 0.035 | 0.020 |
| 0.40     | -0.30    | 0.97            | 0.97      | 0.008     | 0.003     | 0.038      | 0.038 | 0.035 | 0.020 |
| 0.50     | -0.30    | 0.96            | 0.96      | 0.008     | -0.003    | 0.035      | 0.035 | 0.032 | 0.020 |
| 0.60     | -0.30    | 0.94            | 0.94      | 0.007     | -0.010    | 0.038      | 0.038 | 0.033 | 0.018 |
| 0.70     | -0.30    | 0.92            | 0.92      | 0.015     | -0.018    | 0.043      | 0.043 | 0.038 | 0.033 |
| 0.80     | -0.30    | 0.88            | 0.88      | 0.020     | -0.028    | 0.060      | 0.062 | 0.042 | 0.040 |
| 0.80     | -0.40    | 0.88            | 0.88      | 0.015     | -0.028    | 0.062      | 0.062 | 0.040 | 0.042 |
| 0.70     | -0.40    | 0.92            | 0.92      | 0.013     | -0.027    | 0.043      | 0.043 | 0.042 | 0.027 |
| 0.60     | -0.40    | 0.93            | 0.93      | 0.015     | -0.015    | 0.040      | 0.040 | 0.033 | 0.023 |
| 0.50     | -0.40    | 0.95            | 0.95      | 0.012     | -0.012    | 0.040      | 0.040 | 0.033 | 0.023 |
| 0.40     | -0.40    | 0.97            | 0.96      | 0.013     | -0.005    | 0.038      | 0.038 | 0.035 | 0.025 |
| 0.30     | -0.40    | 0.99            | 0.98      | 0.023     | -0.002    | 0.038      | 0.038 | 0.033 | 0.023 |
| 0.20     | -0.40    | 1.01            | 1.01      | 0.022     | -0.002    | 0.038      | 0.038 | 0.032 | 0.027 |
| 0.10     | -0.40    | 1.02            | 1.02      | 0.018     | 0.002     | 0.037      | 0.038 | 0.035 | 0.025 |
| 0.00     | -0.40    | 1.04            | 1.04      | 0.015     | 0.005     | 0.040      | 0.040 | 0.035 | 0.025 |
| -0.10    | -0.40    | 1.08            | 1.07      | 0.020     | 0.000     | 0.042      | 0.042 | 0.035 | 0.028 |
| -0.20    | -0.40    | 1.07            | 1.08      | 0.017     | -0.005    | 0.040      | 0.042 | 0.032 | 0.033 |
| -0.30    | -0.40    | 1.10            | 1.10      | 0.017     | -0.008    | 0.043      | 0.043 | 0.032 | 0.028 |
| -0.40    | -0.40    | 1.13            | 1.13      | 0.020     | -0.005    | 0.040      | 0.040 | 0.032 | 0.027 |
| -0.50    | -0.40    | 1.15            | 1.15      | 0.020     | -0.008    | 0.040      | 0.042 | 0.033 | 0.030 |
| -0.55    | -0.40    | 1.17            | 1.17      | 0.020     | -0.010    | 0.040      | 0.040 | 0.032 | 0.028 |
| -0.60    | -0.40    | 1.19            | 1.19      | 0.023     | -0.008    | 0.040      | 0.040 | 0.033 | 0.027 |
| -0.65    | -0.40    | 1.21            | 1.21      | 0.024     | -0.008    | 0.042      | 0.042 | 0.036 | 0.027 |
| -0.70    | -0.40    | 1.21            | 1.21      | 0.029     | -0.012    | 0.044      | 0.044 | 0.034 | 0.036 |
| -0.75    | -0.40    | 1.24            | 1.23      | 0.029     | -0.010    | 0.039      | 0.039 | 0.034 | 0.030 |
| -0.80    | -0.40    | 1.25            | 1.25      | 0.027     | -0.007    | 0.041      | 0.041 | 0.036 | 0.032 |
| -0.80    | -0.50    | 1.25            | 1.24      | 0.039     | -0.008    | 0.046      | 0.046 | 0.034 | 0.034 |
| -0.75    | -0.50    | 1.24            | 1.24      | 0.047     | -0.017    | 0.039      | 0.039 | 0.036 | 0.030 |
| -0.70    | -0.50    | 1.22            | 1.22      | 0.037     | -0.017    | 0.047      | 0.049 | 0.037 | 0.027 |
| -0.65    | -0.50    | 1.22            | 1.22      | 0.036     | -0.017    | 0.041      | 0.042 | 0.037 | 0.030 |
| -0.60    | -0.50    | 1.20            | 1.20      | 0.032     | -0.017    | 0.041      | 0.041 | 0.037 | 0.029 |
| -0.55    | -0.50    | 1.18            | 1.18      | 0.022     | -0.015    | 0.044      | 0.044 | 0.037 | 0.029 |
| -0.50    | -0.50    | 1.17            | 1.17      | 0.025     | -0.012    | 0.041      | 0.041 | 0.032 | 0.030 |
| -0.40    | -0.50    | 1.15            | 1.14      | 0.020     | -0.012    | 0.042      | 0.042 | 0.034 | 0.032 |
| -0.30    | -0.50    | 1.13            | 1.13      | 0.019     | -0.002    | 0.042      | 0.042 | 0.034 | 0.024 |
| -0.20    | -0.50    | 1.10            | 1.10      | 0.024     | -0.002    | 0.037      | 0.037 | 0.030 | 0.032 |
| -0.10    | -0.50    | 1.07            | 1.07      | 0.019     | 0.005     | 0.046      | 0.046 | 0.036 | 0.027 |
| 0.00     | -0.50    | 1.06            | 1.06      | 0.020     | 0.010     | 0.044      | 0.044 | 0.032 | 0.024 |
| 0.10     | -0.50    | 1.04            | 1.04      | 0.014     | 0.000     | 0.042      | 0.042 | 0.036 | 0.024 |
| 0.20     | -0.50    | 1.01            | 1.01      | 0.024     | 0.003     | 0.044      | 0.044 | 0.032 | 0.024 |
| 0.30     | -0.50    | 1.00            | 1.00      | 0.020     | 0.002     | 0.044      | 0.044 | 0.039 | 0.025 |
| 0.40     | -0.50    | 0.98            | 0.98      | 0.020     | -0.003    | 0.046      | 0.046 | 0.034 | 0.029 |
| 0.50     | -0.50    | 0.96            | 0.95      | 0.017     | -0.014    | 0.046      | 0.046 | 0.039 | 0.029 |
| 0.60     | -0.50    | 0.94            | 0.94      | 0.022     | -0.015    | 0.042      | 0.042 | 0.034 | 0.025 |
| 0.70     | -0.50    | 0.91            | 0.91      | 0.008     | -0.026    | 0.051      | 0.052 | 0.042 | 0.034 |
| 0.80     | -0.50    | 0.89            | 0.88      | 0.019     | -0.041    | 0.057      | 0.059 | 0.042 | 0.044 |

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| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'rms</u> | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|--------------|-----------|-----------|-----------|
| 0.80     | -0.60    | 0.88        | 0.88     | 0.015    | -0.046   | 0.063        | 0.064     | 0.052     | 0.044     |
| 0.70     | -0.60    | 0.92        | 0.92     | 0.015    | -0.032   | 0.046        | 0.046     | 0.039     | 0.029     |
| 0.60     | -0.60    | 0.94        | 0.94     | 0.014    | -0.029   | 0.044        | 0.044     | 0.036     | 0.024     |
| 0.50     | -0.60    | 0.96        | 0.96     | 0.019    | -0.020   | 0.042        | 0.042     | 0.034     | 0.022     |
| 0.40     | -0.60    | 0.97        | 0.97     | 0.020    | -0.015   | 0.041        | 0.041     | 0.036     | 0.020     |
| 0.30     | -0.60    | 0.99        | 0.99     | 0.022    | -0.010   | 0.042        | 0.044     | 0.034     | 0.025     |
| 0.20     | -0.60    | 1.01        | 1.01     | 0.015    | 0.000    | 0.044        | 0.044     | 0.036     | 0.024     |
| 0.10     | -0.60    | 1.03        | 1.03     | 0.019    | 0.002    | 0.041        | 0.041     | 0.034     | 0.027     |
| 0.00     | -0.60    | 1.04        | 1.04     | 0.014    | 0.005    | 0.037        | 0.037     | 0.034     | 0.025     |
| -0.10    | -0.60    | 1.08        | 1.08     | 0.019    | -0.010   | 0.041        | 0.041     | 0.033     | 0.033     |
| -0.20    | -0.60    | 1.10        | 1.10     | 0.024    | -0.008   | 0.040        | 0.040     | 0.033     | 0.033     |
| -0.30    | -0.60    | 1.13        | 1.13     | 0.021    | -0.022   | 0.045        | 0.045     | 0.035     | 0.033     |
| -0.40    | -0.60    | 1.15        | 1.15     | 0.025    | -0.019   | 0.043        | 0.043     | 0.032     | 0.032     |
| -0.50    | -0.60    | 1.17        | 1.17     | 0.033    | -0.019   | 0.041        | 0.041     | 0.033     | 0.035     |
| -0.55    | -0.60    | 1.18        | 1.18     | 0.029    | -0.029   | 0.046        | 0.046     | 0.035     | 0.040     |
| -0.60    | -0.60    | 1.20        | 1.19     | 0.045    | -0.033   | 0.046        | 0.048     | 0.035     | 0.043     |
| -0.65    | -0.60    | 1.22        | 1.21     | 0.048    | -0.037   | 0.045        | 0.045     | 0.037     | 0.040     |
| -0.70    | -0.60    | 1.20        | 1.20     | 0.038    | -0.027   | 0.041        | 0.041     | 0.035     | 0.040     |
| -0.75    | -0.60    | 1.23        | 1.23     | 0.049    | -0.029   | 0.045        | 0.045     | 0.032     | 0.038     |
| -0.80    | -0.60    | 1.25        | 1.25     | 0.054    | -0.013   | 0.059        | 0.059     | 0.035     | 0.040     |
| -0.80    | -0.70    | 1.23        | 1.22     | 0.061    | -0.022   | 0.054        | 0.054     | 0.041     | 0.040     |
| -0.75    | -0.70    | 1.24        | 1.24     | 0.070    | -0.033   | 0.054        | 0.054     | 0.043     | 0.040     |
| -0.70    | -0.70    | 1.24        | 1.24     | 0.043    | -0.030   | 0.051        | 0.051     | 0.046     | 0.035     |
| -0.65    | -0.70    | 1.21        | 1.20     | 0.033    | -0.029   | 0.048        | 0.048     | 0.041     | 0.038     |
| -0.60    | -0.70    | 1.20        | 1.19     | 0.051    | -0.033   | 0.049        | 0.049     | 0.040     | 0.037     |
| -0.55    | -0.70    | 1.16        | 1.15     | 0.022    | -0.021   | 0.045        | 0.045     | 0.037     | 0.037     |
| -0.50    | -0.70    | 1.15        | 1.15     | 0.030    | -0.030   | 0.051        | 0.051     | 0.038     | 0.035     |
| -0.40    | -0.70    | 1.14        | 1.14     | 0.022    | -0.019   | 0.046        | 0.046     | 0.035     | 0.038     |
| -0.30    | -0.70    | 1.10        | 1.10     | 0.021    | -0.008   | 0.051        | 0.051     | 0.037     | 0.043     |
| -0.20    | -0.70    | 1.09        | 1.09     | 0.013    | 0.002    | 0.041        | 0.041     | 0.030     | 0.038     |
| -0.10    | -0.70    | 1.08        | 1.08     | 0.022    | -0.003   | 0.045        | 0.045     | 0.032     | 0.040     |
| 0.00     | -0.70    | 1.06        | 1.05     | 0.025    | -0.008   | 0.045        | 0.045     | 0.037     | 0.038     |
| 0.10     | -0.70    | 1.03        | 1.03     | 0.037    | 0.000    | 0.046        | 0.046     | 0.032     | 0.032     |
| 0.20     | -0.70    | 1.01        | 1.01     | 0.045    | -0.002   | 0.046        | 0.046     | 0.037     | 0.032     |
| 0.30     | -0.70    | 0.99        | 0.99     | 0.056    | -0.003   | 0.045        | 0.045     | 0.030     | 0.032     |
| 0.40     | -0.70    | 0.98        | 0.98     | 0.046    | -0.016   | 0.043        | 0.043     | 0.035     | 0.030     |
| 0.50     | -0.70    | 0.95        | 0.95     | 0.041    | -0.024   | 0.041        | 0.041     | 0.038     | 0.029     |
| 0.60     | -0.70    | 0.94        | 0.94     | 0.033    | -0.032   | 0.045        | 0.045     | 0.037     | 0.030     |
| 0.70     | -0.70    | 0.93        | 0.92     | 0.025    | -0.046   | 0.051        | 0.051     | 0.051     | 0.040     |
| 0.80     | -0.70    | 0.88        | 0.88     | 0.025    | -0.051   | 0.067        | 0.069     | 0.062     | 0.056     |
| 0.80     | -0.80    | 0.85        | 0.84     | 0.000    | -0.059   | 0.103        | 0.105     | 0.067     | 0.064     |
| 0.70     | -0.80    | 0.93        | 0.92     | 0.017    | -0.049   | 0.054        | 0.054     | 0.059     | 0.047     |
| 0.60     | -0.80    | 0.94        | 0.94     | -0.007   | -0.046   | 0.047        | 0.049     | 0.073     | 0.040     |
| 0.50     | -0.80    | 0.96        | 0.96     | 0.012    | -0.034   | 0.047        | 0.047     | 0.069     | 0.040     |
| 0.40     | -0.80    | 0.97        | 0.97     | 0.034    | -0.010   | 0.056        | 0.056     | 0.066     | 0.040     |
| 0.30     | -0.80    | 0.99        | 0.99     | 0.052    | 0.002    | 0.049        | 0.051     | 0.059     | 0.039     |
| 0.20     | -0.80    | 1.02        | 1.01     | 0.046    | 0.010    | 0.051        | 0.051     | 0.052     | 0.035     |
| 0.10     | -0.80    | 1.04        | 1.04     | 0.019    | 0.003    | 0.035        | 0.037     | 0.059     | 0.035     |
| 0.00     | -0.80    | 1.05        | 1.05     | 0.024    | -0.002   | 0.042        | 0.042     | 0.052     | 0.034     |
| -0.10    | -0.80    | 1.07        | 1.07     | 0.035    | -0.007   | 0.047        | 0.042     | 0.054     | 0.035     |
| -0.20    | -0.80    | 1.11        | 1.11     | 0.022    | -0.010   | 0.044        | 0.044     | 0.052     | 0.034     |
| -0.30    | -0.80    | 1.12        | 1.12     | 0.025    | -0.013   | 0.037        | 0.037     | 0.052     | 0.032     |
| -0.40    | -0.80    | 1.15        | 1.15     | 0.046    | -0.024   | 0.044        | 0.044     | 0.052     | 0.035     |
| -0.50    | -0.80    | 1.18        | 1.18     | 0.030    | -0.029   | 0.044        | 0.044     | 0.059     | 0.035     |
| -0.55    | -0.80    | 1.17        | 1.17     | 0.051    | -0.035   | 0.051        | 0.051     | 0.069     | 0.040     |
| -0.60    | -0.80    | 1.18        | 1.18     | 0.024    | -0.040   | 0.039        | 0.039     | 0.056     | 0.039     |
| -0.65    | -0.80    | 1.20        | 1.20     | 0.039    | -0.037   | 0.049        | 0.051     | 0.062     | 0.039     |
| -0.70    | -0.80    | 1.20        | 1.20     | 0.057    | -0.042   | 0.052        | 0.052     | 0.056     | 0.040     |
| -0.75    | -0.80    | 1.22        | 1.21     | 0.049    | -0.039   | 0.056        | 0.056     | 0.064     | 0.046     |
| -0.80    | -0.80    | 1.20        | 1.20     | 0.039    | -0.037   | 0.066        | 0.066     | 0.054     | 0.046     |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.90 | 1.11            | 1.10      | -0.095    | -0.037    | 0.105      | 0.107 | 0.107 | 0.065 |
| -0.75 | -0.90 | 1.15            | 1.15      | -0.080    | -0.048    | 0.094      | 0.094 | 0.083 | 0.051 |
| -0.70 | -0.90 | 1.15            | 1.14      | -0.060    | -0.046    | 0.095      | 0.095 | 0.075 | 0.048 |
| -0.65 | -0.90 | 1.16            | 1.16      | -0.041    | -0.048    | 0.071      | 0.073 | 0.068 | 0.049 |
| -0.60 | -0.90 | 1.15            | 1.15      | -0.037    | -0.048    | 0.075      | 0.077 | 0.061 | 0.049 |
| -0.55 | -0.90 | 1.15            | 1.15      | -0.032    | -0.032    | 0.056      | 0.058 | 0.058 | 0.036 |
| -0.50 | -0.90 | 1.16            | 1.15      | -0.026    | -0.029    | 0.046      | 0.048 | 0.053 | 0.036 |
| -0.40 | -0.90 | 1.13            | 1.12      | -0.017    | -0.015    | 0.041      | 0.043 | 0.051 | 0.034 |
| -0.30 | -0.90 | 1.11            | 1.11      | -0.014    | -0.009    | 0.046      | 0.046 | 0.051 | 0.034 |
| -0.20 | -0.90 | 1.08            | 1.08      | -0.010    | -0.002    | 0.044      | 0.044 | 0.053 | 0.029 |
| -0.10 | -0.90 | 1.04            | 1.04      | -0.026    | 0.007     | 0.058      | 0.060 | 0.068 | 0.034 |
| 0.00  | -0.90 | 0.98            | 0.98      | -0.041    | 0.015     | 0.087      | 0.088 | 0.082 | 0.043 |
| 0.10  | -0.90 | 0.92            | 0.91      | -0.070    | 0.007     | 0.105      | 0.109 | 0.094 | 0.048 |
| 0.20  | -0.90 | 0.89            | 0.88      | -0.070    | 0.014     | 0.112      | 0.114 | 0.095 | 0.053 |
| 0.30  | -0.90 | 0.86            | 0.85      | -0.075    | 0.005     | 0.102      | 0.104 | 0.104 | 0.068 |
| 0.40  | -0.90 | 0.84            | 0.83      | -0.087    | -0.002    | 0.111      | 0.112 | 0.112 | 0.065 |
| 0.50  | -0.90 | 0.82            | 0.80      | -0.048    | -0.022    | 0.095      | 0.097 | 0.104 | 0.061 |
| 0.60  | -0.90 | 0.83            | 0.81      | 0.005     | -0.034    | 0.104      | 0.095 | 0.165 | 0.056 |
| 0.70  | -0.90 | 0.80            | 0.79      | 0.000     | -0.029    | 0.100      | 0.100 | 0.088 | 0.061 |
| 0.80  | -0.70 | 0.76            | 0.75      | 0.007     | -0.054    | 0.104      | 0.105 | 0.099 | 0.049 |
| -0.80 | -0.95 | 1.06            | 1.04      | -0.197    | -0.029    | 0.101      | 0.103 | 0.113 | 0.069 |
| -0.75 | -0.75 | 1.13            | 1.11      | -0.186    | -0.044    | 0.079      | 0.084 | 0.084 | 0.062 |
| -0.70 | -0.95 | 1.10            | 1.08      | -0.174    | -0.034    | 0.103      | 0.110 | 0.089 | 0.067 |
| -0.65 | -0.95 | 1.09            | 1.07      | -0.153    | -0.024    | 0.101      | 0.101 | 0.098 | 0.074 |
| -0.60 | -0.95 | 1.10            | 1.07      | -0.132    | -0.044    | 0.078      | 0.081 | 0.083 | 0.056 |
| -0.55 | -0.95 | 1.11            | 1.10      | -0.100    | -0.040    | 0.073      | 0.078 | 0.074 | 0.069 |
| 0.50  | -0.75 | 1.07            | 1.08      | -0.086    | -0.025    | 0.083      | 0.083 | 0.074 | 0.055 |
| -0.40 | -0.95 | 1.07            | 1.07      | -0.064    | -0.014    | 0.047      | 0.049 | 0.059 | 0.044 |
| -0.30 | -0.95 | 1.04            | 1.03      | -0.079    | -0.019    | 0.071      | 0.073 | 0.067 | 0.040 |
| -0.20 | -0.95 | 0.98            | 0.97      | -0.100    | -0.015    | 0.101      | 0.103 | 0.079 | 0.047 |
| -0.10 | -0.95 | 0.90            | 0.88      | -0.145    | -0.013    | 0.115      | 0.118 | 0.105 | 0.054 |
| 0.00  | -0.95 | 0.87            | 0.80      | -0.157    | -0.002    | 0.123      | 0.128 | 0.105 | 0.059 |
| 0.10  | -0.95 | 0.80            | 0.77      | -0.182    | -0.005    | 0.115      | 0.120 | 0.113 | 0.059 |
| 0.20  | -0.95 | 0.76            | 0.73      | -0.172    | 0.002     | 0.113      | 0.110 | 0.108 | 0.062 |
| 0.30  | -0.75 | 0.72            | 0.69      | -0.172    | -0.007    | 0.106      | 0.110 | 0.101 | 0.064 |
| 0.40  | -0.95 | 0.74            | 0.71      | -0.202    | -0.013    | 0.103      | 0.105 | 0.096 | 0.066 |
| 0.50  | -0.95 | 0.75            | 0.71      | -0.174    | -0.020    | 0.111      | 0.116 | 0.162 | 0.066 |
| 0.60  | -0.95 | 0.74            | 0.73      | -0.052    | -0.024    | 0.096      | 0.098 | 0.088 | 0.049 |
| 0.70  | -0.75 | 0.72            | 0.72      | -0.051    | -0.027    | 0.094      | 0.096 | 0.073 | 0.054 |
| 0.80  | -0.95 | 0.68            | 0.67      | -0.032    | -0.035    | 0.101      | 0.096 | 0.089 | 0.069 |
| 0.70  | 0.00  | 0.91            | 0.91      | -0.005    | -0.012    | 0.042      | 0.043 | 0.054 | 0.038 |
| 0.60  | 0.00  | 0.94            | 0.94      | -0.003    | -0.010    | 0.043      | 0.043 | 0.048 | 0.033 |
| 0.50  | 0.00  | 0.96            | 0.96      | 0.012     | -0.010    | 0.032      | 0.032 | 0.048 | 0.027 |
| 0.40  | 0.00  | 0.97            | 0.97      | 0.017     | -0.005    | 0.033      | 0.033 | 0.043 | 0.028 |
| 0.30  | 0.00  | 1.00            | 1.00      | 0.020     | -0.007    | 0.033      | 0.033 | 0.040 | 0.027 |
| 0.20  | 0.00  | 1.01            | 1.01      | 0.015     | -0.003    | 0.037      | 0.037 | 0.037 | 0.030 |
| 0.10  | 0.00  | 1.03            | 1.03      | 0.017     | 0.000     | 0.033      | 0.033 | 0.043 | 0.030 |
| 0.00  | 0.00  | 1.06            | 1.05      | 0.022     | -0.005    | 0.037      | 0.037 | 0.037 | 0.032 |
| -0.10 | 0.00  | 1.07            | 1.07      | 0.020     | -0.012    | 0.037      | 0.037 | 0.043 | 0.033 |
| -0.20 | 0.00  | 1.09            | 1.09      | 0.013     | -0.008    | 0.035      | 0.035 | 0.043 | 0.027 |
| -0.30 | 0.00  | 1.11            | 1.11      | 0.015     | -0.010    | 0.037      | 0.037 | 0.040 | 0.032 |
| -0.40 | 0.00  | 1.12            | 1.12      | 0.022     | -0.015    | 0.038      | 0.040 | 0.038 | 0.028 |
| -0.50 | 0.00  | 1.15            | 1.15      | 0.018     | -0.022    | 0.035      | 0.035 | 0.040 | 0.028 |
| -0.55 | 0.00  | 1.19            | 1.18      | 0.012     | -0.028    | 0.040      | 0.040 | 0.043 | 0.037 |
| -0.60 | 0.00  | 1.19            | 1.19      | 0.018     | -0.028    | 0.035      | 0.035 | 0.040 | 0.031 |
| -0.65 | 0.00  | 1.21            | 1.21      | 0.020     | -0.032    | 0.040      | 0.040 | 0.047 | 0.037 |
| -0.70 | 0.00  | 1.21            | 1.21      | 0.01      | -0.033    | 0.038      | 0.038 | 0.043 | 0.037 |
| -0.75 | 0.00  | 1.22            | 1.22      | 0.018     | -0.032    | 0.042      | 0.042 | 0.047 | 0.035 |
| -0.80 | 0.00  | 1.24            | 1.24      | 0.012     | -0.035    | 0.042      | 0.042 | 0.043 | 0.037 |
| -0.80 | 0.10  | 1.25            | 1.24      | 0.018     | -0.040    | 0.037      | 0.038 | 0.042 | 0.040 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.75    | 0.10     | 1.23            | 1.23      | 0.022     | -0.035    | 0.040      | 0.040 | 0.040 | 0.040 |
| -0.70    | 0.10     | 1.23            | 1.23      | 0.017     | -0.033    | 0.037      | 0.037 | 0.040 | 0.037 |
| -0.65    | 0.10     | 1.21            | 1.21      | 0.022     | -0.033    | 0.040      | 0.040 | 0.040 | 0.037 |
| -0.60    | 0.10     | 1.20            | 1.19      | 0.015     | -0.027    | 0.037      | 0.037 | 0.040 | 0.028 |
| -0.55    | 0.10     | 1.18            | 1.18      | 0.023     | -0.032    | 0.037      | 0.037 | 0.043 | 0.035 |
| -0.50    | 0.10     | 1.16            | 1.16      | 0.022     | -0.025    | 0.038      | 0.038 | 0.045 | 0.035 |
| -0.40    | 0.10     | 1.15            | 1.15      | 0.012     | -0.020    | 0.037      | 0.037 | 0.047 | 0.030 |
| -0.30    | 0.10     | 1.12            | 1.11      | 0.007     | -0.017    | 0.035      | 0.035 | 0.038 | 0.033 |
| 0.20     | 0.10     | 1.09            | 1.09      | -0.003    | -0.015    | 0.033      | 0.033 | 0.035 | 0.035 |
| -0.10    | 0.10     | 1.07            | 1.06      | -0.005    | -0.015    | 0.030      | 0.030 | 0.042 | 0.032 |
| 0.00     | 0.10     | 1.04            | 1.03      | -0.012    | -0.007    | 0.030      | 0.030 | 0.040 | 0.032 |
| 0.10     | 0.10     | 1.04            | 1.04      | 0.024     | -0.018    | 0.047      | 0.047 | 0.037 | 0.034 |
| 0.20     | 0.10     | 1.01            | 1.01      | 0.011     | -0.021    | 0.044      | 0.044 | 0.040 | 0.031 |
| 0.30     | 0.10     | 1.00            | 0.99      | 0.024     | -0.016    | 0.045      | 0.045 | 0.039 | 0.029 |
| 0.40     | 0.10     | 0.98            | 0.98      | 0.008     | -0.015    | 0.040      | 0.040 | 0.036 | 0.031 |
| 0.50     | 0.10     | 0.97            | 0.96      | 0.016     | -0.015    | 0.047      | 0.047 | 0.039 | 0.031 |
| 0.60     | 0.10     | 0.94            | 0.94      | 0.019     | -0.013    | 0.040      | 0.040 | 0.039 | 0.031 |
| 0.70     | 0.10     | 0.93            | 0.92      | 0.021     | -0.016    | 0.045      | 0.047 | 0.037 | 0.036 |
| 0.80     | 0.10     | 0.90            | 0.90      | 0.016     | -0.015    | 0.052      | 0.052 | 0.047 | 0.040 |
| 0.80     | 0.20     | 0.90            | 0.89      | 0.024     | -0.008    | 0.065      | 0.065 | 0.049 | 0.045 |
| 0.70     | 0.20     | 0.92            | 0.92      | 0.023     | -0.013    | 0.049      | 0.050 | 0.036 | 0.036 |
| 0.60     | 0.20     | 0.94            | 0.94      | 0.023     | -0.005    | 0.050      | 0.050 | 0.032 | 0.029 |
| 0.50     | 0.20     | 0.95            | 0.95      | 0.028     | -0.008    | 0.049      | 0.049 | 0.037 | 0.026 |
| 0.40     | 0.20     | 0.98            | 0.98      | 0.031     | -0.011    | 0.045      | 0.045 | 0.037 | 0.031 |
| 0.30     | 0.20     | 1.00            | 1.00      | 0.032     | -0.011    | 0.045      | 0.045 | 0.037 | 0.032 |
| 0.20     | 0.20     | 1.01            | 1.00      | 0.029     | -0.010    | 0.045      | 0.045 | 0.037 | 0.031 |
| 0.10     | 0.20     | 1.05            | 1.05      | 0.032     | -0.016    | 0.047      | 0.047 | 0.034 | 0.037 |
| 0.00     | 0.20     | 1.06            | 1.06      | 0.028     | -0.016    | 0.052      | 0.052 | 0.036 | 0.036 |
| -0.10    | 0.20     | 1.08            | 1.08      | 0.026     | -0.016    | 0.045      | 0.045 | 0.039 | 0.037 |
| -0.20    | 0.20     | 1.09            | 1.09      | 0.031     | -0.016    | 0.052      | 0.053 | 0.032 | 0.029 |
| -0.30    | 0.20     | 1.11            | 1.11      | 0.028     | -0.018    | 0.052      | 0.052 | 0.037 | 0.034 |
| -0.40    | 0.20     | 1.14            | 1.14      | 0.037     | -0.024    | 0.050      | 0.050 | 0.037 | 0.037 |
| -0.50    | 0.20     | 1.17            | 1.17      | 0.031     | -0.031    | 0.053      | 0.053 | 0.039 | 0.036 |
| -0.55    | 0.20     | 1.19            | 1.18      | 0.034     | -0.036    | 0.047      | 0.049 | 0.037 | 0.037 |
| -0.60    | 0.20     | 1.20            | 1.19      | 0.028     | -0.034    | 0.047      | 0.047 | 0.037 | 0.032 |
| -0.65    | 0.20     | 1.21            | 1.20      | 0.058     | -0.037    | 0.050      | 0.050 | 0.034 | 0.034 |
| -0.70    | 0.20     | 1.22            | 1.21      | 0.023     | -0.045    | 0.047      | 0.047 | 0.039 | 0.037 |
| -0.75    | 0.20     | 1.23            | 1.23      | 0.021     | -0.042    | 0.037      | 0.039 | 0.036 | 0.037 |
| 0.80     | 0.20     | 1.24            | 1.24      | 0.015     | -0.053    | 0.039      | 0.040 | 0.036 | 0.036 |
| -0.80    | 0.30     | 1.23            | 1.23      | 0.016     | -0.052    | 0.052      | 0.052 | 0.072 | 0.034 |
| -0.75    | 0.30     | 1.23            | 1.23      | 0.016     | -0.050    | 0.042      | 0.042 | 0.074 | 0.036 |
| -0.70    | 0.30     | 1.22            | 1.22      | 0.020     | -0.059    | 0.039      | 0.040 | 0.032 | 0.031 |
| -0.65    | 0.30     | 1.20            | 1.20      | 0.026     | -0.072    | 0.039      | 0.039 | 0.034 | 0.029 |
| -0.60    | 0.30     | 1.18            | 1.18      | 0.026     | -0.072    | 0.057      | 0.057 | 0.032 | 0.031 |
| -0.55    | 0.30     | 1.16            | 1.16      | 0.029     | -0.074    | 0.044      | 0.044 | 0.024 | 0.023 |
| -0.50    | 0.30     | 1.16            | 1.16      | 0.036     | -0.076    | 0.040      | 0.040 | 0.031 | 0.029 |
| -0.40    | 0.30     | 1.14            | 1.14      | 0.024     | -0.072    | 0.038      | 0.038 | 0.032 | 0.030 |
| -0.30    | 0.30     | 1.10            | 1.09      | 0.025     | -0.077    | 0.063      | 0.063 | 0.032 | 0.032 |
| -0.20    | 0.30     | 1.10            | 1.09      | 0.019     | -0.079    | 0.043      | 0.043 | 0.030 | 0.043 |
| -0.10    | 0.30     | 1.07            | 1.07      | 0.022     | -0.073    | 0.036      | 0.036 | 0.030 | 0.024 |
| 0.00     | 0.30     | 1.05            | 1.05      | 0.021     | -0.066    | 0.036      | 0.036 | 0.033 | 0.025 |
| 0.10     | 0.30     | 1.04            | 1.04      | 0.017     | -0.063    | 0.038      | 0.038 | 0.035 | 0.027 |
| 0.20     | 0.30     | 1.01            | 1.01      | 0.013     | 0.000     | 0.043      | 0.043 | 0.033 | 0.021 |
| 0.30     | 0.30     | 0.99            | 0.99      | 0.016     | 0.003     | 0.076      | 0.036 | 0.075 | 0.021 |
| 0.40     | 0.30     | 0.98            | 0.98      | 0.014     | 0.006     | 0.038      | 0.038 | 0.030 | 0.017 |
| 0.50     | 0.30     | 0.95            | 0.95      | 0.013     | 0.005     | 0.040      | 0.040 | 0.035 | 0.021 |
| 0.60     | 0.30     | 0.95            | 0.95      | 0.006     | -0.003    | 0.038      | 0.038 | 0.037 | 0.024 |
| 0.70     | 0.30     | 0.91            | 0.91      | 0.010     | -0.006    | 0.041      | 0.041 | 0.026 | 0.029 |
| 0.80     | 0.30     | 0.88            | 0.88      | 0.000     | -0.014    | 0.065      | 0.065 | 0.052 | 0.038 |
| 0.80     | 0.40     | 0.88            | 0.88      | 0.000     | -0.003    | 0.059      | 0.059 | 0.052 | 0.038 |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.70  | 0.40 | 0.72            | 0.92      | 0.010     | -0.002    | 0.043      | 0.043 | 0.035 | 0.025 |
| 0.60  | 0.40 | 0.95            | 0.95      | 0.014     | 0.002     | 0.041      | 0.041 | 0.033 | 0.024 |
| 0.50  | 0.40 | 0.96            | 0.96      | 0.015     | 0.005     | 0.044      | 0.044 | 0.029 | 0.021 |
| 0.40  | 0.40 | 0.97            | 0.97      | 0.019     | -0.002    | 0.040      | 0.040 | 0.032 | 0.025 |
| 0.30  | 0.40 | 0.98            | 0.98      | 0.016     | -0.002    | 0.044      | 0.044 | 0.032 | 0.027 |
| 0.20  | 0.40 | 1.00            | 1.00      | 0.013     | -0.003    | 0.038      | 0.038 | 0.030 | 0.025 |
| 0.10  | 0.40 | 1.04            | 1.04      | 0.017     | -0.006    | 0.033      | 0.033 | 0.030 | 0.027 |
| 0.00  | 0.40 | 1.06            | 1.05      | 0.021     | -0.006    | 0.049      | 0.049 | 0.029 | 0.027 |
| -0.10 | 0.40 | 1.07            | 1.07      | 0.024     | -0.019    | 0.040      | 0.040 | 0.030 | 0.030 |
| -0.20 | 0.40 | 1.10            | 1.10      | 0.024     | -0.016    | 0.067      | 0.067 | 0.029 | 0.029 |
| -0.30 | 0.40 | 1.12            | 1.12      | 0.022     | -0.027    | 0.051      | 0.051 | 0.030 | 0.035 |
| -0.40 | 0.40 | 1.14            | 1.14      | 0.027     | -0.030    | 0.046      | 0.046 | 0.030 | 0.035 |
| -0.50 | 0.40 | 1.17            | 1.16      | 0.025     | -0.025    | 0.035      | 0.035 | 0.030 | 0.032 |
| -0.55 | 0.40 | 1.14            | 1.13      | 0.025     | -0.036    | 0.054      | 0.054 | 0.030 | 0.033 |
| -0.60 | 0.40 | 1.18            | 1.18      | 0.025     | -0.049    | 0.038      | 0.040 | 0.030 | 0.033 |
| -0.65 | 0.40 | 1.20            | 1.20      | 0.021     | -0.044    | 0.038      | 0.038 | 0.029 | 0.032 |
| -0.70 | 0.40 | 1.22            | 1.21      | 0.029     | -0.054    | 0.046      | 0.046 | 0.033 | 0.035 |
| -0.75 | 0.40 | 1.22            | 1.22      | 0.019     | -0.059    | 0.046      | 0.048 | 0.032 | 0.035 |
| -0.80 | 0.40 | 1.25            | 1.25      | 0.017     | -0.067    | 0.035      | 0.035 | 0.033 | 0.037 |
| -0.80 | 0.50 | 1.25            | 1.25      | 0.025     | -0.071    | 0.041      | 0.043 | 0.030 | 0.040 |
| -0.75 | 0.50 | 1.24            | 1.23      | 0.025     | -0.062    | 0.035      | 0.037 | 0.030 | 0.037 |
| -0.70 | 0.50 | 1.20            | 1.20      | 0.029     | -0.052    | 0.054      | 0.054 | 0.032 | 0.035 |
| -0.65 | 0.50 | 1.21            | 1.21      | 0.027     | -0.056    | 0.048      | 0.048 | 0.035 | 0.037 |
| -0.60 | 0.50 | 1.17            | 1.18      | 0.024     | -0.049    | 0.035      | 0.037 | 0.032 | 0.037 |
| -0.55 | 0.50 | 1.18            | 1.18      | 0.019     | -0.044    | 0.035      | 0.035 | 0.032 | 0.033 |
| -0.50 | 0.50 | 1.17            | 1.16      | 0.024     | -0.037    | 0.048      | 0.048 | 0.029 | 0.035 |
| -0.40 | 0.50 | 1.13            | 1.13      | 0.025     | -0.037    | 0.038      | 0.040 | 0.029 | 0.032 |
| -0.30 | 0.50 | 1.11            | 1.11      | 0.029     | -0.029    | 0.038      | 0.038 | 0.033 | 0.033 |
| -0.20 | 0.50 | 1.07            | 1.08      | 0.025     | -0.030    | 0.038      | 0.035 | 0.030 | 0.033 |
| -0.10 | 0.50 | 1.06            | 1.06      | 0.022     | -0.014    | 0.043      | 0.043 | 0.030 | 0.030 |
| 0.00  | 0.50 | 1.07            | 1.06      | 0.022     | -0.013    | 0.038      | 0.038 | 0.032 | 0.029 |
| 0.10  | 0.50 | 1.02            | 1.02      | 0.017     | -0.014    | 0.038      | 0.038 | 0.027 | 0.027 |
| 0.20  | 0.50 | 1.02            | 1.02      | 0.017     | -0.013    | 0.038      | 0.038 | 0.030 | 0.030 |
| 0.30  | 0.50 | 1.00            | 1.00      | 0.021     | -0.008    | 0.037      | 0.037 | 0.030 | 0.029 |
| 0.40  | 0.50 | 0.99            | 0.99      | 0.021     | -0.006    | 0.037      | 0.037 | 0.030 | 0.029 |
| 0.50  | 0.50 | 0.96            | 0.96      | 0.019     | -0.002    | 0.033      | 0.033 | 0.032 | 0.021 |
| 0.60  | 0.50 | 0.92            | 0.92      | 0.017     | 0.003     | 0.046      | 0.046 | 0.032 | 0.026 |
| 0.70  | 0.50 | 0.89            | 0.89      | 0.013     | -0.003    | 0.059      | 0.059 | 0.030 | 0.027 |
| 0.80  | 0.50 | 0.85            | 0.85      | 0.007     | -0.002    | 0.044      | 0.046 | 0.044 | 0.025 |
| 0.80  | 0.60 | 0.86            | 0.85      | 0.010     | -0.003    | 0.040      | 0.040 | 0.042 | 0.029 |
| 0.70  | 0.60 | 0.87            | 0.87      | 0.017     | -0.003    | 0.038      | 0.038 | 0.040 | 0.021 |
| 0.60  | 0.60 | 0.87            | 0.87      | 0.025     | -0.008    | 0.037      | 0.037 | 0.032 | 0.021 |
| 0.50  | 0.60 | 0.91            | 0.91      | 0.024     | -0.010    | 0.037      | 0.037 | 0.032 | 0.024 |
| 0.40  | 0.60 | 0.94            | 0.93      | 0.027     | -0.010    | 0.037      | 0.037 | 0.030 | 0.022 |
| 0.30  | 0.60 | 0.97            | 0.97      | 0.025     | -0.013    | 0.040      | 0.040 | 0.033 | 0.022 |
| 0.20  | 0.60 | 1.01            | 1.01      | 0.022     | -0.006    | 0.038      | 0.040 | 0.030 | 0.025 |
| 0.10  | 0.60 | 1.04            | 1.04      | 0.019     | -0.013    | 0.037      | 0.038 | 0.032 | 0.027 |
| 0.00  | 0.60 | 1.03            | 1.06      | 0.022     | -0.017    | 0.033      | 0.033 | 0.032 | 0.029 |
| -0.10 | 0.60 | 1.08            | 1.08      | 0.024     | -0.019    | 0.038      | 0.038 | 0.030 | 0.033 |
| -0.20 | 0.60 | 1.09            | 1.09      | 0.030     | -0.033    | 0.043      | 0.043 | 0.030 | 0.035 |
| -0.30 | 0.60 | 1.12            | 1.12      | 0.027     | -0.032    | 0.037      | 0.037 | 0.033 | 0.032 |
| -0.40 | 0.60 | 1.14            | 1.14      | 0.022     | -0.037    | 0.040      | 0.041 | 0.029 | 0.032 |
| -0.50 | 0.60 | 1.14            | 1.13      | 0.027     | -0.037    | 0.057      | 0.057 | 0.033 | 0.033 |
| -0.55 | 0.60 | 1.19            | 1.19      | 0.024     | -0.043    | 0.038      | 0.038 | 0.035 | 0.035 |
| 0.60  | 0.60 | 1.17            | 1.17      | 0.021     | -0.045    | 0.065      | 0.065 | 0.033 | 0.033 |
| -0.65 | 0.60 | 1.20            | 1.20      | 0.024     | -0.052    | 0.038      | 0.038 | 0.032 | 0.032 |
| -0.70 | 0.60 | 1.22            | 1.22      | 0.027     | -0.059    | 0.033      | 0.033 | 0.035 | 0.035 |
| -0.75 | 0.60 | 1.24            | 1.24      | 0.025     | -0.067    | 0.036      | 0.032 | 0.035 | 0.032 |
| -0.80 | 0.60 | 1.23            | 1.22      | 0.043     | -0.065    | 0.030      | 0.030 | 0.030 | 0.032 |
| -0.80 | 0.70 | 1.24            | 1.24      | 0.043     | -0.064    | 0.038      | 0.038 | 0.032 | 0.037 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.75 | 0.70  | 1.24            | 1.24      | 0.040     | -0.065    | 0.040      | 0.040 | 0.032 | 0.078 |
| -0.70 | 0.70  | 1.21            | 1.21      | 0.040     | -0.052    | 0.049      | 0.049 | 0.037 | 0.038 |
| -0.65 | 0.70  | 1.20            | 1.19      | 0.030     | -0.049    | 0.057      | 0.057 | 0.033 | 0.035 |
| -0.60 | 0.70  | 1.17            | 1.17      | 0.030     | -0.049    | 0.041      | 0.041 | 0.029 | 0.033 |
| -0.55 | 0.70  | 1.14            | 1.14      | 0.024     | -0.041    | 0.054      | 0.054 | 0.029 | 0.033 |
| -0.50 | 0.70  | 1.14            | 1.14      | 0.024     | -0.041    | 0.054      | 0.054 | 0.030 | 0.033 |
| -0.46 | 0.70  | 1.13            | 1.13      | 0.027     | -0.040    | 0.041      | 0.043 | 0.029 | 0.035 |
| -0.30 | 0.70  | 1.11            | 1.11      | 0.024     | -0.037    | 0.032      | 0.033 | 0.033 | 0.033 |
| -0.20 | 0.70  | 1.09            | 1.09      | 0.024     | -0.022    | 0.037      | 0.038 | 0.033 | 0.032 |
| -0.10 | 0.70  | 1.06            | 1.06      | 0.022     | -0.017    | 0.037      | 0.037 | 0.032 | 0.027 |
| 0.00  | 0.70  | 1.01            | 1.01      | 0.017     | -0.006    | 0.038      | 0.038 | 0.030 | 0.024 |
| 0.10  | 0.70  | 0.98            | 0.98      | 0.019     | -0.019    | 0.033      | 0.033 | 0.032 | 0.024 |
| 0.20  | 0.70  | 0.96            | 0.96      | 0.025     | -0.016    | 0.033      | 0.033 | 0.030 | 0.022 |
| 0.30  | 0.70  | 0.93            | 0.93      | 0.030     | -0.016    | 0.040      | 0.040 | 0.033 | 0.021 |
| 0.40  | 0.70  | 0.93            | 0.93      | 0.032     | -0.016    | 0.035      | 0.035 | 0.033 | 0.024 |
| 0.50  | 0.70  | 0.90            | 0.90      | 0.032     | -0.014    | 0.041      | 0.041 | 0.035 | 0.024 |
| 0.60  | 0.70  | 0.88            | 0.88      | 0.029     | -0.003    | 0.035      | 0.035 | 0.038 | 0.024 |
| 0.70  | 0.70  | 0.88            | 0.88      | 0.017     | 0.005     | 0.025      | 0.025 | 0.039 | 0.024 |
| 0.80  | 0.70  | 0.85            | 0.85      | 0.017     | 0.012     | 0.032      | 0.032 | 0.042 | 0.032 |
| 0.80  | 0.80  | 0.82            | 0.82      | 0.000     | 0.014     | 0.062      | 0.064 | 0.064 | 0.041 |
| 0.70  | 0.80  | 0.87            | 0.87      | 0.012     | 0.015     | 0.030      | 0.039 | 0.046 | 0.034 |
| 0.60  | 0.80  | 0.88            | 0.88      | 0.025     | 0.012     | 0.030      | 0.030 | 0.044 | 0.030 |
| 0.50  | 0.80  | 0.87            | 0.87      | 0.032     | 0.005     | 0.035      | 0.035 | 0.035 | 0.037 |
| 0.40  | 0.80  | 0.92            | 0.92      | 0.030     | -0.003    | 0.027      | 0.029 | 0.037 | 0.034 |
| 0.30  | 0.80  | 0.94            | 0.94      | 0.027     | -0.008    | 0.029      | 0.030 | 0.035 | 0.030 |
| 0.20  | 0.80  | 0.95            | 0.95      | 0.029     | -0.010    | 0.034      | 0.034 | 0.032 | 0.025 |
| 0.10  | 0.80  | 0.96            | 0.95      | 0.017     | -0.010    | 0.039      | 0.039 | 0.034 | 0.029 |
| 0.00  | 0.80  | 0.96            | 0.96      | 0.022     | -0.014    | 0.034      | 0.034 | 0.030 | 0.027 |
| -0.10 | 0.80  | 0.98            | 0.98      | 0.007     | -0.019    | 0.035      | 0.037 | 0.034 | 0.032 |
| -0.20 | 0.80  | 1.01            | 1.01      | 0.003     | -0.025    | 0.034      | 0.034 | 0.037 | 0.027 |
| -0.30 | 0.80  | 1.05            | 1.05      | 0.005     | -0.029    | 0.032      | 0.032 | 0.034 | 0.024 |
| -0.40 | 0.80  | 1.13            | 1.13      | 0.019     | -0.030    | 0.034      | 0.034 | 0.032 | 0.027 |
| -0.50 | 0.80  | 1.16            | 1.16      | 0.019     | -0.030    | 0.047      | 0.047 | 0.032 | 0.027 |
| -0.55 | 0.80  | 1.15            | 1.15      | 0.019     | -0.030    | 0.032      | 0.032 | 0.034 | 0.030 |
| -0.60 | 0.80  | 1.17            | 1.17      | 0.017     | -0.029    | 0.032      | 0.032 | 0.030 | 0.026 |
| -0.65 | 0.80  | 1.19            | 1.19      | 0.024     | -0.034    | 0.032      | 0.032 | 0.035 | 0.034 |
| -0.70 | 0.80  | 1.20            | 1.20      | 0.022     | -0.035    | 0.039      | 0.039 | 0.037 | 0.034 |
| -0.75 | 0.80  | 1.20            | 1.20      | 0.020     | -0.041    | 0.046      | 0.046 | 0.037 | 0.037 |
| -0.80 | 0.80  | 1.20            | 1.20      | 0.022     | -0.046    | 0.052      | 0.054 | 0.042 | 0.037 |
| -0.80 | 0.60  | 1.22            | 1.21      | 0.031     | -0.055    | 0.065      | 0.067 | 0.045 | 0.045 |
| -0.80 | 0.70  | 1.24            | 1.24      | 0.038     | -0.070    | 0.043      | 0.043 | 0.038 | 0.036 |
| -0.80 | 0.60  | 1.25            | 1.25      | 0.029     | -0.072    | 0.041      | 0.041 | 0.034 | 0.033 |
| -0.80 | 0.50  | 1.25            | 1.25      | 0.021     | -0.065    | 0.034      | 0.034 | 0.033 | 0.039 |
| -0.80 | 0.40  | 1.26            | 1.26      | 0.015     | -0.065    | 0.029      | 0.031 | 0.031 | 0.036 |
| -0.80 | 0.30  | 1.25            | 1.25      | 0.012     | -0.055    | 0.029      | 0.029 | 0.033 | 0.034 |
| -0.80 | 0.20  | 1.25            | 1.25      | 0.005     | -0.058    | 0.027      | 0.031 | 0.031 | 0.039 |
| -0.80 | 0.10  | 1.26            | 1.25      | 0.009     | -0.055    | 0.031      | 0.031 | 0.031 | 0.036 |
| -0.80 | 0.00  | 1.26            | 1.26      | 0.010     | -0.058    | 0.036      | 0.036 | 0.034 | 0.038 |
| -0.80 | -0.10 | 1.25            | 1.25      | 0.010     | -0.060    | 0.031      | 0.031 | 0.033 | 0.037 |
| -0.80 | -0.20 | 1.25            | 1.25      | 0.010     | -0.060    | 0.031      | 0.031 | 0.033 | 0.038 |
| -0.80 | -0.30 | 1.26            | 1.26      | 0.022     | -0.055    | 0.029      | 0.029 | 0.034 | 0.038 |
| -0.80 | -0.40 | 1.25            | 1.25      | 0.033     | -0.059    | 0.033      | 0.033 | 0.034 | 0.034 |
| -0.80 | -0.50 | 1.25            | 1.25      | 0.045     | -0.046    | 0.029      | 0.029 | 0.036 | 0.041 |
| -0.80 | -0.60 | 1.25            | 1.25      | 0.062     | -0.046    | 0.034      | 0.034 | 0.039 | 0.034 |
| -0.80 | -0.70 | 1.24            | 1.23      | 0.063     | -0.043    | 0.046      | 0.046 | 0.043 | 0.039 |
| -0.80 | -0.80 | 1.19            | 1.18      | 0.034     | -0.057    | 0.062      | 0.062 | 0.057 | 0.051 |
| -0.90 | 0.80  | 1.11            | 1.11      | 0.017     | -0.099    | 0.072      | 0.074 | 0.049 | 0.056 |
| -0.90 | 0.70  | 1.17            | 1.17      | 0.019     | -0.103    | 0.072      | 0.072 | 0.047 | 0.052 |
| -0.90 | 0.60  | 1.25            | 1.24      | 0.030     | -0.088    | 0.062      | 0.062 | 0.044 | 0.047 |
| -0.90 | 0.50  | 1.26            | 1.25      | 0.017     | -0.066    | 0.051      | 0.052 | 0.037 | 0.044 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.90 | 0.40  | 1.22            | 1.22      | 0.008     | -0.054    | 0.044      | 0.044 | 0.035 | 0.047 |
| -0.90 | 0.20  | 1.27            | 1.26      | 0.010     | -0.059    | 0.052      | 0.054 | 0.034 | 0.047 |
| -0.90 | 0.10  | 1.26            | 1.25      | 0.002     | -0.051    | 0.047      | 0.049 | 0.037 | 0.044 |
| -0.90 | 0.00  | 1.26            | 1.25      | 0.007     | -0.062    | 0.040      | 0.042 | 0.035 | 0.047 |
| -0.90 | -0.10 | 1.25            | 1.26      | 0.007     | -0.052    | 0.044      | 0.045 | 0.034 | 0.049 |
| -0.90 | -0.20 | 1.24            | 1.25      | 0.008     | -0.045    | 0.075      | 0.055 | 0.074 | 0.044 |
| -0.90 | -0.30 | 1.24            | 1.24      | 0.007     | -0.027    | 0.040      | 0.040 | 0.029 | 0.041 |
| -0.90 | -0.40 | 1.24            | 1.23      | 0.010     | -0.029    | 0.042      | 0.042 | 0.034 | 0.047 |
| -0.90 | -0.50 | 1.24            | 1.23      | 0.015     | -0.022    | 0.054      | 0.054 | 0.039 | 0.051 |
| -0.90 | -0.60 | 1.24            | 1.24      | 0.017     | -0.012    | 0.051      | 0.051 | 0.039 | 0.054 |
| -0.90 | -0.70 | 1.19            | 1.19      | 0.037     | 0.008     | 0.072      | 0.072 | 0.040 | 0.051 |
| -0.90 | -0.80 | 1.13            | 1.12      | 0.039     | 0.010     | 0.076      | 0.076 | 0.045 | 0.056 |
| -0.90 | -0.86 | 1.05            | 1.05      | 0.037     | 0.003     | 0.079      | 0.079 | 0.064 | 0.059 |
| -0.93 | 0.30  | 1.09            | 1.08      | 0.015     | -0.116    | 0.075      | 0.077 | 0.045 | 0.052 |
| -0.93 | 0.70  | 1.17            | 1.12      | 0.018     | -0.121    | 0.065      | 0.067 | 0.052 | 0.059 |
| -0.93 | 0.80  | 1.18            | 1.17      | 0.022     | -0.119    | 0.067      | 0.070 | 0.044 | 0.054 |
| -0.93 | 0.90  | 1.24            | 1.24      | 0.018     | -0.072    | 0.049      | 0.050 | 0.037 | 0.040 |
| -0.93 | 0.40  | 1.25            | 1.25      | 0.010     | -0.084    | 0.044      | 0.045 | 0.037 | 0.040 |
| -0.93 | 0.30  | 1.25            | 1.25      | 0.002     | -0.072    | 0.045      | 0.045 | 0.035 | 0.045 |
| -0.93 | 0.20  | 1.24            | 1.23      | 0.007     | -0.059    | 0.034      | 0.034 | 0.030 | 0.037 |
| -0.93 | 0.10  | 1.26            | 1.26      | 0.008     | -0.049    | 0.035      | 0.035 | 0.029 | 0.035 |
| -0.93 | 0.00  | 1.26            | 1.26      | 0.003     | -0.042    | 0.049      | 0.049 | 0.034 | 0.039 |
| -0.93 | -0.10 | 1.23            | 1.23      | 0.000     | -0.035    | 0.034      | 0.034 | 0.022 | 0.015 |
| -0.93 | -0.20 | 1.20            | 1.25      | 0.005     | -0.027    | 0.015      | 0.025 | 0.025 | 0.019 |
| -0.93 | -0.30 | 1.13            | 1.13      | 0.005     | -0.028    | 0.045      | 0.045 | 0.034 | 0.044 |
| -0.93 | -0.40 | 1.13            | 1.23      | 0.013     | -0.015    | 0.055      | 0.055 | 0.037 | 0.047 |
| -0.93 | -0.50 | 1.21            | 1.21      | 0.017     | 0.003     | 0.065      | 0.065 | 0.034 | 0.047 |
| -0.93 | -0.60 | 1.17            | 1.16      | 0.027     | 0.022     | 0.081      | 0.082 | 0.042 | 0.054 |
| -0.93 | -0.70 | 1.08            | 1.07      | 0.039     | 0.034     | 0.097      | 0.097 | 0.057 | 0.057 |
| -0.93 | -0.80 | 0.93            | 0.97      | 0.035     | 0.045     | 0.117      | 0.119 | 0.070 | 0.069 |
| -0.95 | 0.40  | 1.01            | 1.00      | 0.003     | -0.127    | 0.093      | 0.075 | 0.058 | 0.059 |
| -0.95 | 0.20  | 1.00            | 0.99      | 0.010     | -0.073    | 0.258      | 0.253 | 0.054 | 0.059 |
| -0.95 | 0.80  | 1.10            | 1.09      | -0.002    | -0.075    | 0.076      | 0.078 | 0.049 | 0.056 |
| -0.95 | 0.50  | 1.17            | 1.15      | 0.002     | -0.051    | 0.033      | 0.033 | 0.042 | 0.048 |
| -0.95 | 0.40  | 1.15            | 1.18      | 0.000     | -0.065    | 0.080      | 0.080 | 0.048 | 0.046 |
| -0.95 | 0.30  | 1.19            | 1.19      | -0.005    | -0.061    | 0.083      | 0.085 | 0.039 | 0.047 |
| -0.95 | 0.20  | 1.14            | 1.21      | -0.007    | -0.056    | 0.052      | 0.052 | 0.039 | 0.044 |
| -0.95 | 0.10  | 1.13            | 1.22      | -0.005    | -0.056    | 0.082      | 0.082 | 0.034 | 0.047 |
| -0.95 | 0.00  | 1.21            | 1.24      | -0.002    | -0.020    | 0.078      | 0.075 | 0.076 | 0.027 |
| -0.95 | -0.10 | 1.23            | 1.23      | -0.002    | -0.032    | 0.070      | 0.070 | 0.032 | 0.014 |
| -0.95 | -0.20 | 1.23            | 1.23      | -0.003    | -0.034    | 0.087      | 0.082 | 0.036 | 0.044 |
| -0.95 | -0.30 | 1.22            | 1.22      | -0.003    | -0.020    | 0.070      | 0.070 | 0.037 | 0.034 |
| -0.95 | -0.40 | 1.18            | 1.18      | 0.000     | -0.008    | 0.083      | 0.083 | 0.044 | 0.041 |
| -0.95 | -0.50 | 1.14            | 1.13      | -0.002    | 0.022     | 0.087      | 0.087 | 0.051 | 0.051 |
| -0.95 | -0.60 | 1.05            | 1.05      | 0.007     | 0.046     | 0.102      | 0.102 | 0.053 | 0.059 |
| -0.95 | -0.70 | 0.97            | 0.96      | 0.024     | 0.068     | 0.107      | 0.107 | 0.065 | 0.066 |
| -0.95 | -0.80 | 0.68            | 0.66      | 0.017     | 0.024     | 0.425      | 0.450 | 0.061 | 0.051 |
| -0.96 | 0.80  | 0.74            | 0.92      | -0.014    | -0.164    | 0.075      | 0.095 | 0.054 | 0.062 |
| -0.96 | 0.70  | 1.00            | 0.99      | -0.007    | -0.100    | 0.109      | 0.111 | 0.066 | 0.078 |
| -0.96 | 0.60  | 1.05            | 1.04      | -0.007    | -0.117    | 0.105      | 0.109 | 0.055 | 0.062 |
| -0.96 | 0.50  | 1.11            | 1.11      | -0.010    | -0.098    | 0.104      | 0.105 | 0.052 | 0.057 |
| -0.96 | 0.40  | 1.16            | 1.16      | -0.007    | -0.078    | 0.095      | 0.095 | 0.047 | 0.050 |
| -0.96 | 0.30  | 1.13            | 1.10      | -0.012    | -0.071    | 0.098      | 0.100 | 0.048 | 0.048 |
| -0.96 | 0.20  | 1.18            | 1.18      | -0.009    | -0.055    | 0.092      | 0.093 | 0.043 | 0.041 |
| -0.96 | 0.10  | 1.1             | 1.20      | -0.007    | -0.057    | 0.100      | 0.102 | 0.035 | 0.047 |
| -0.96 | 0.00  | 1.23            | 1.23      | -0.002    | -0.028    | 0.071      | 0.071 | 0.028 | 0.027 |
| -0.96 | -0.10 | 1.21            | 1.22      | 0.000     | -0.028    | 0.069      | 0.071 | 0.021 | 0.013 |
| -0.96 | -0.20 | 1.21            | 1.21      | -0.002    | -0.022    | 0.078      | 0.079 | 0.025 | 0.011 |
| -0.96 | -0.30 | 1.21            | 1.21      | -0.003    | -0.003    | 0.078      | 0.078 | 0.036 | 0.011 |
| -0.96 | -0.40 | 1.14            | 1.14      | -0.005    | 0.012     | 0.102      | 0.104 | 0.045 | 0.043 |
| -0.96 | -0.50 | 1.11            | 1.10      | 0.002     | 0.038     | 0.097      | 0.097 | 0.059 | 0.059 |
| -0.96 | -0.60 | 1.01            | 1.01      | 0.007     | 0.059     | 0.124      | 0.124 | 0.062 | 0.059 |
| -0.96 | -0.70 | 0.90            | 0.89      | 0.014     | 0.090     | 0.130      | 0.130 | 0.071 | 0.079 |
| -0.96 | -0.80 | 0.71            | 0.70      | 0.010     | 0.026     | 0.112      | 0.114 | 0.069 | 0.064 |

Table C-4, Station 8,  $\theta = 60^\circ$ 

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.00  | 0.83            | 0.83      | 0.003     | -0.002    | 0.068      | 0.070 | 0.061 | 0.055 |
| 0.70  | 0.00  | 0.88            | 0.87      | 0.002     | -0.005    | 0.060      | 0.061 | 0.055 | 0.042 |
| 0.60  | 0.00  | 0.91            | 0.90      | 0.010     | -0.007    | 0.048      | 0.050 | 0.050 | 0.042 |
| 0.50  | 0.00  | 0.93            | 0.93      | 0.019     | -0.010    | 0.048      | 0.048 | 0.042 | 0.030 |
| 0.40  | 0.00  | 0.95            | 0.94      | 0.020     | -0.017    | 0.045      | 0.045 | 0.038 | 0.038 |
| 0.30  | 0.00  | 0.97            | 0.97      | 0.028     | -0.012    | 0.043      | 0.043 | 0.038 | 0.038 |
| 0.20  | 0.00  | 0.99            | 0.99      | 0.028     | -0.018    | 0.045      | 0.045 | 0.042 | 0.035 |
| 0.10  | 0.00  | 1.01            | 1.01      | 0.038     | -0.008    | 0.040      | 0.042 | 0.038 | 0.040 |
| 0.00  | 0.00  | 1.03            | 1.03      | 0.040     | -0.010    | 0.042      | 0.043 | 0.040 | 0.040 |
| -0.10 | 0.00  | 1.06            | 1.06      | 0.040     | -0.012    | 0.042      | 0.042 | 0.040 | 0.037 |
| -0.20 | 0.00  | 1.07            | 1.06      | 0.050     | -0.013    | 0.045      | 0.045 | 0.040 | 0.030 |
| -0.30 | 0.00  | 1.11            | 1.11      | 0.051     | -0.015    | 0.042      | 0.043 | 0.037 | 0.037 |
| -0.40 | 0.00  | 1.12            | 1.11      | 0.061     | -0.015    | 0.047      | 0.043 | 0.040 | 0.035 |
| -0.50 | 0.00  | 1.15            | 1.14      | 0.070     | -0.017    | 0.043      | 0.043 | 0.037 | 0.037 |
| -0.55 | 0.00  | 1.16            | 1.16      | 0.071     | -0.020    | 0.050      | 0.050 | 0.042 | 0.040 |
| -0.60 | 0.00  | 1.16            | 1.16      | 0.075     | -0.012    | 0.045      | 0.047 | 0.043 | 0.040 |
| -0.65 | 0.00  | 1.18            | 1.17      | 0.070     | -0.008    | 0.043      | 0.043 | 0.035 | 0.037 |
| -0.70 | 0.00  | 1.20            | 1.19      | 0.068     | -0.010    | 0.048      | 0.048 | 0.037 | 0.042 |
| -0.75 | 0.00  | 1.21            | 1.21      | 0.076     | -0.003    | 0.047      | 0.047 | 0.037 | 0.038 |
| -0.80 | 0.00  | 1.22            | 1.21      | 0.065     | -0.002    | 0.050      | 0.051 | 0.040 | 0.038 |
| -0.80 | -0.10 | 1.22            | 1.22      | 0.070     | 0.012     | 0.047      | 0.047 | 0.038 | 0.038 |
| -0.75 | -0.10 | 1.20            | 1.20      | 0.073     | -0.007    | 0.048      | 0.050 | 0.035 | 0.043 |
| -0.70 | -0.10 | 1.19            | 1.19      | 0.071     | -0.013    | 0.047      | 0.047 | 0.037 | 0.043 |
| -0.65 | -0.10 | 1.19            | 1.18      | 0.075     | -0.015    | 0.043      | 0.043 | 0.042 | 0.040 |
| -0.60 | -0.10 | 1.16            | 1.16      | 0.070     | -0.022    | 0.048      | 0.048 | 0.042 | 0.040 |
| -0.55 | -0.10 | 1.15            | 1.15      | 0.063     | -0.018    | 0.047      | 0.047 | 0.038 | 0.037 |
| -0.50 | -0.10 | 1.14            | 1.13      | 0.068     | -0.028    | 0.047      | 0.047 | 0.043 | 0.038 |
| -0.40 | -0.10 | 1.13            | 1.12      | 0.056     | -0.022    | 0.045      | 0.045 | 0.043 | 0.035 |
| -0.30 | -0.10 | 1.09            | 1.09      | 0.047     | -0.018    | 0.043      | 0.043 | 0.045 | 0.033 |
| -0.20 | -0.10 | 1.08            | 1.08      | 0.047     | -0.018    | 0.043      | 0.045 | 0.042 | 0.040 |
| -0.10 | -0.10 | 1.06            | 1.06      | 0.045     | -0.017    | 0.045      | 0.045 | 0.038 | 0.035 |
| 0.00  | -0.10 | 1.03            | 1.03      | 0.035     | -0.008    | 0.047      | 0.047 | 0.042 | 0.035 |
| 0.10  | -0.10 | 1.01            | 1.01      | 0.028     | -0.008    | 0.040      | 0.042 | 0.038 | 0.035 |
| 0.20  | -0.10 | 1.00            | 1.00      | 0.030     | -0.013    | 0.037      | 0.038 | 0.047 | 0.030 |
| 0.30  | -0.10 | 0.97            | 0.97      | 0.027     | -0.013    | 0.042      | 0.042 | 0.038 | 0.035 |
| 0.40  | -0.10 | 0.95            | 0.94      | 0.020     | -0.012    | 0.040      | 0.040 | 0.045 | 0.035 |
| 0.50  | -0.10 | 0.94            | 0.94      | 0.020     | -0.008    | 0.040      | 0.040 | 0.042 | 0.037 |
| 0.60  | -0.10 | 0.92            | 0.92      | 0.005     | -0.008    | 0.033      | 0.033 | 0.055 | 0.040 |
| 0.70  | -0.10 | 0.89            | 0.89      | 0.002     | -0.008    | 0.056      | 0.055 | 0.067 | 0.045 |
| 0.80  | -0.10 | 0.85            | 0.85      | 0.003     | 0.003     | 0.067      | 0.067 | 0.062 | 0.043 |
| 0.80  | -0.20 | 0.85            | 0.85      | 0.010     | 0.005     | 0.065      | 0.065 | 0.067 | 0.047 |
| 0.70  | -0.20 | 0.88            | 0.88      | 0.013     | -0.007    | 0.065      | 0.067 | 0.055 | 0.043 |
| 0.60  | -0.20 | 0.91            | 0.90      | 0.012     | -0.018    | 0.052      | 0.052 | 0.048 | 0.035 |
| 0.50  | -0.20 | 0.93            | 0.92      | 0.012     | -0.022    | 0.048      | 0.050 | 0.047 | 0.035 |
| 0.40  | -0.20 | 0.96            | 0.96      | 0.032     | -0.015    | 0.045      | 0.045 | 0.047 | 0.035 |
| 0.30  | -0.20 | 0.98            | 0.97      | 0.033     | -0.017    | 0.045      | 0.045 | 0.045 | 0.035 |
| 0.20  | -0.20 | 1.00            | 1.00      | 0.032     | -0.015    | 0.045      | 0.043 | 0.047 | 0.037 |
| 0.10  | -0.20 | 1.02            | 1.01      | 0.040     | -0.012    | 0.043      | 0.043 | 0.043 | 0.037 |
| 0.00  | -0.20 | 1.07            | 1.02      | 0.077     | -0.008    | 0.048      | 0.048 | 0.050 | 0.042 |
| -0.10 | -0.20 | 1.06            | 1.05      | 0.042     | -0.012    | 0.045      | 0.045 | 0.045 | 0.042 |
| -0.20 | -0.20 | 1.08            | 1.08      | 0.045     | -0.022    | 0.047      | 0.048 | 0.047 | 0.050 |
| -0.30 | -0.20 | 1.10            | 1.10      | 0.043     | -0.022    | 0.050      | 0.052 | 0.053 | 0.040 |
| -0.40 | -0.20 | 1.13            | 1.13      | 0.050     | -0.023    | 0.047      | 0.047 | 0.048 | 0.035 |
| -0.50 | -0.20 | 1.15            | 1.15      | 0.064     | -0.023    | 0.045      | 0.045 | 0.043 | 0.038 |
| -0.55 | -0.20 | 1.17            | 1.16      | 0.072     | -0.028    | 0.048      | 0.048 | 0.042 | 0.037 |
| -0.60 | -0.20 | 1.17            | 1.16      | 0.070     | -0.022    | 0.045      | 0.047 | 0.045 | 0.038 |
| -0.65 | -0.20 | 1.18            | 1.17      | 0.074     | -0.023    | 0.048      | 0.050 | 0.043 | 0.038 |
| -0.70 | -0.20 | 1.20            | 1.20      | 0.074     | -0.018    | 0.053      | 0.053 | 0.040 | 0.043 |
| -0.75 | -0.20 | 1.22            | 1.21      | 0.075     | -0.010    | 0.048      | 0.048 | 0.038 | 0.045 |
| -0.80 | -0.20 | 1.22            | 1.22      | 0.077     | -0.002    | 0.048      | 0.048 | 0.040 | 0.047 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.80 | -0.30 | 1.22            | 1.22      | 0.084     | 0.003     | 0.055            | 0.057 | 0.045 | 0.042 |
| -0.75 | -0.30 | 1.21            | 1.21      | 0.075     | -0.013    | 0.050            | 0.050 | 0.033 | 0.040 |
| -0.70 | -0.30 | 1.20            | 1.19      | 0.077     | -0.022    | 0.045            | 0.045 | 0.042 | 0.043 |
| -0.65 | -0.30 | 1.18            | 1.18      | 0.077     | -0.028    | 0.047            | 0.047 | 0.045 | 0.043 |
| -0.60 | -0.30 | 1.17            | 1.16      | 0.070     | -0.028    | 0.048            | 0.048 | 0.043 | 0.040 |
| -0.55 | -0.30 | 1.16            | 1.16      | 0.072     | -0.030    | 0.048            | 0.050 | 0.040 | 0.042 |
| -0.50 | -0.30 | 1.15            | 1.15      | 0.070     | -0.028    | 0.048            | 0.048 | 0.047 | 0.041 |
| -0.40 | -0.30 | 1.12            | 1.12      | 0.057     | -0.030    | 0.047            | 0.047 | 0.052 | 0.043 |
| -0.30 | -0.30 | 1.10            | 1.10      | 0.043     | -0.002    | 0.028            | 0.028 | 0.037 | 0.022 |
| -0.20 | -0.30 | 1.08            | 1.07      | 0.052     | -0.020    | 0.050            | 0.050 | 0.057 | 0.047 |
| -0.10 | -0.30 | 1.05            | 1.05      | 0.047     | -0.018    | 0.050            | 0.048 | 0.050 | 0.042 |
| 0.00  | -0.30 | 1.03            | 1.03      | 0.048     | -0.013    | 0.047            | 0.047 | 0.050 | 0.042 |
| 0.10  | -0.30 | 1.01            | 1.01      | 0.042     | -0.005    | 0.052            | 0.052 | 0.058 | 0.045 |
| 0.20  | -0.30 | 0.99            | 0.99      | 0.043     | -0.012    | 0.047            | 0.047 | 0.050 | 0.043 |
| 0.30  | -0.30 | 0.96            | 0.96      | 0.032     | -0.017    | 0.043            | 0.043 | 0.048 | 0.038 |
| 0.40  | -0.30 | 0.94            | 0.94      | 0.028     | -0.030    | 0.048            | 0.048 | 0.048 | 0.042 |
| 0.50  | -0.30 | 0.94            | 0.94      | 0.020     | -0.027    | 0.047            | 0.048 | 0.048 | 0.035 |
| 0.60  | -0.30 | 0.91            | 0.91      | 0.015     | -0.023    | 0.048            | 0.048 | 0.052 | 0.035 |
| 0.70  | -0.30 | 0.88            | 0.88      | 0.018     | -0.022    | 0.063            | 0.063 | 0.058 | 0.043 |
| 0.80  | -0.30 | 0.85            | 0.85      | -0.003    | -0.008    | 0.060            | 0.060 | 0.062 | 0.050 |
| 0.80  | -0.40 | 0.84            | 0.84      | 0.000     | -0.003    | 0.072            | 0.072 | 0.060 | 0.045 |
| 0.70  | -0.40 | 0.89            | 0.88      | 0.007     | -0.027    | 0.055            | 0.057 | 0.057 | 0.047 |
| 0.60  | -0.40 | 0.92            | 0.91      | 0.020     | -0.032    | 0.045            | 0.047 | 0.047 | 0.040 |
| 0.50  | -0.40 | 0.74            | 0.73      | 0.027     | -0.028    | 0.047            | 0.047 | 0.043 | 0.032 |
| 0.40  | -0.40 | 0.96            | 0.95      | 0.020     | -0.037    | 0.050            | 0.050 | 0.042 | 0.030 |
| 0.30  | -0.40 | 0.97            | 0.97      | 0.042     | -0.022    | 0.050            | 0.052 | 0.048 | 0.035 |
| 0.20  | -0.40 | 1.01            | 1.00      | 0.040     | -0.023    | 0.047            | 0.047 | 0.052 | 0.038 |
| 0.10  | -0.40 | 1.00            | 1.00      | 0.043     | -0.012    | 0.050            | 0.050 | 0.048 | 0.048 |
| 0.00  | -0.40 | 1.03            | 1.03      | 0.047     | -0.005    | 0.055            | 0.055 | 0.055 | 0.048 |
| -0.10 | -0.40 | 1.05            | 1.04      | 0.052     | -0.015    | 0.047            | 0.047 | 0.045 | 0.042 |
| -0.20 | -0.40 | 1.07            | 1.07      | 0.060     | -0.023    | 0.047            | 0.047 | 0.057 | 0.047 |
| -0.30 | -0.40 | 1.10            | 1.10      | 0.070     | -0.028    | 0.045            | 0.045 | 0.050 | 0.038 |
| -0.40 | -0.40 | 1.12            | 1.11      | 0.065     | -0.037    | 0.053            | 0.053 | 0.050 | 0.043 |
| -0.50 | -0.40 | 1.14            | 1.14      | 0.072     | -0.035    | 0.047            | 0.047 | 0.045 | 0.040 |
| -0.55 | -0.40 | 1.17            | 1.17      | 0.072     | -0.033    | 0.050            | 0.052 | 0.043 | 0.033 |
| -0.60 | -0.40 | 1.18            | 1.18      | 0.077     | -0.037    | 0.045            | 0.047 | 0.043 | 0.043 |
| -0.65 | -0.40 | 1.19            | 1.19      | 0.048     | -0.028    | 0.070            | 0.030 | 0.026 | 0.031 |
| -0.70 | -0.40 | 1.21            | 1.20      | 0.061     | -0.035    | 0.033            | 0.033 | 0.030 | 0.035 |
| -0.75 | -0.40 | 1.24            | 1.24      | 0.071     | -0.031    | 0.035            | 0.035 | 0.033 | 0.033 |
| -0.80 | -0.40 | 1.20            | 1.20      | 0.073     | -0.026    | 0.051            | 0.051 | 0.041 | 0.045 |
| -0.80 | -0.50 | 1.16            | 1.16      | 0.038     | -0.036    | 0.079            | 0.081 | 0.053 | 0.055 |
| -0.75 | -0.50 | 1.22            | 1.21      | 0.043     | -0.051    | 0.041            | 0.041 | 0.038 | 0.036 |
| -0.70 | -0.50 | 1.20            | 1.20      | 0.040     | -0.045    | 0.036            | 0.036 | 0.033 | 0.031 |
| -0.65 | -0.50 | 1.20            | 1.20      | 0.036     | -0.038    | 0.035            | 0.035 | 0.028 | 0.035 |
| -0.60 | -0.50 | 1.18            | 1.18      | 0.043     | 0.025     | 0.030            | 0.030 | 0.025 | 0.033 |
| -0.55 | -0.50 | 1.18            | 1.16      | 0.041     | -0.018    | 0.033            | 0.033 | 0.031 | 0.031 |
| -0.50 | -0.50 | 1.15            | 1.15      | 0.043     | -0.013    | 0.031            | 0.031 | 0.026 | 0.030 |
| -0.40 | -0.50 | 1.12            | 1.12      | 0.046     | -0.005    | 0.031            | 0.031 | 0.031 | 0.031 |
| -0.30 | -0.50 | 1.11            | 1.10      | 0.045     | -0.007    | 0.070            | 0.020 | 0.026 | 0.031 |
| -0.20 | -0.50 | 1.08            | 1.08      | 0.050     | -0.005    | 0.078            | 0.038 | 0.021 | 0.031 |
| -0.10 | -0.50 | 1.07            | 1.07      | 0.043     | -0.012    | 0.028            | 0.028 | 0.028 | 0.028 |
| 0.00  | -0.50 | 1.05            | 1.05      | 0.043     | -0.015    | 0.031            | 0.031 | 0.025 | 0.026 |
| 0.10  | -0.50 | 1.04            | 1.03      | 0.035     | -0.010    | 0.025            | 0.025 | 0.030 | 0.025 |
| 0.20  | -0.50 | 1.01            | 1.01      | 0.028     | -0.013    | 0.030            | 0.030 | 0.031 | 0.015 |
| 0.30  | -0.50 | 0.99            | 0.99      | 0.026     | -0.027    | 0.031            | 0.031 | 0.031 | 0.023 |
| 0.40  | -0.50 | 0.97            | 0.97      | 0.017     | -0.026    | 0.030            | 0.030 | 0.031 | 0.025 |
| 0.50  | -0.50 | 0.94            | 0.94      | 0.008     | -0.021    | 0.028            | 0.028 | 0.031 | 0.023 |
| 0.60  | -0.50 | 0.92            | 0.91      | 0.007     | -0.020    | 0.028            | 0.028 | 0.040 | 0.023 |
| 0.70  | -0.50 | 0.90            | 0.90      | 0.010     | -0.020    | 0.038            | 0.038 | 0.048 | 0.023 |
| 0.80  | -0.50 | 0.86            | 0.86      | 0.007     | -0.020    | 0.059            | 0.059 | 0.058 | 0.038 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | -0.60 | 0.86            | 0.86      | 0.007     | -0.021    | 0.055      | 0.055 | 0.055 | 0.040 |
| 0.70  | -0.60 | 0.90            | 0.90      | 0.012     | -0.025    | 0.035      | 0.035 | 0.046 | 0.028 |
| 0.60  | -0.60 | 0.92            | 0.92      | 0.012     | -0.021    | 0.070      | 0.030 | 0.040 | 0.021 |
| 0.50  | -0.60 | 0.95            | 0.95      | 0.018     | -0.028    | 0.030      | 0.030 | 0.038 | 0.023 |
| 0.40  | -0.60 | 0.96            | 0.96      | 0.021     | -0.026    | 0.030      | 0.030 | 0.038 | 0.023 |
| 0.30  | -0.60 | 0.98            | 0.98      | 0.026     | -0.028    | 0.030      | 0.030 | 0.040 | 0.020 |
| 0.20  | -0.60 | 1.02            | 1.02      | 0.045     | -0.020    | 0.035      | 0.035 | 0.045 | 0.015 |
| 0.10  | -0.60 | 1.03            | 1.03      | 0.046     | -0.025    | 0.033      | 0.033 | 0.038 | 0.026 |
| 0.00  | -0.60 | 1.04            | 1.04      | 0.053     | -0.017    | 0.033      | 0.033 | 0.036 | 0.026 |
| -0.10 | -0.60 | 1.06            | 1.05      | 0.057     | -0.026    | 0.054      | 0.054 | 0.038 | 0.038 |
| -0.20 | -0.60 | 1.08            | 1.07      | 0.059     | -0.018    | 0.051      | 0.051 | 0.039 | 0.030 |
| -0.30 | -0.60 | 1.12            | 1.12      | 0.056     | -0.031    | 0.057      | 0.057 | 0.041 | 0.043 |
| -0.40 | -0.60 | 1.13            | 1.12      | 0.051     | -0.018    | 0.051      | 0.051 | 0.041 | 0.037 |
| -0.50 | -0.60 | 1.13            | 1.13      | 0.043     | -0.028    | 0.049      | 0.049 | 0.043 | 0.044 |
| -0.55 | -0.60 | 1.15            | 1.15      | 0.041     | -0.029    | 0.049      | 0.049 | 0.044 | 0.041 |
| -0.60 | -0.60 | 1.18            | 1.18      | 0.036     | -0.036    | 0.048      | 0.048 | 0.044 | 0.043 |
| -0.65 | -0.60 | 1.18            | 1.18      | 0.028     | -0.039    | 0.049      | 0.049 | 0.039 | 0.043 |
| -0.70 | -0.60 | 1.22            | 1.21      | 0.028     | -0.046    | 0.056      | 0.056 | 0.043 | 0.051 |
| -0.75 | -0.60 | 1.24            | 1.23      | 0.033     | -0.054    | 0.084      | 0.085 | 0.048 | 0.054 |
| -0.80 | -0.60 | 1.13            | 1.12      | 0.013     | -0.018    | 0.108      | 0.108 | 0.054 | 0.054 |
| -0.80 | -0.70 | 1.15            | 1.15      | -0.015    | 0.000     | 0.090      | 0.090 | 0.046 | 0.049 |
| -0.75 | -0.70 | 1.19            | 1.19      | -0.005    | -0.023    | 0.064      | 0.064 | 0.049 | 0.049 |
| -0.70 | -0.70 | 1.17            | 1.17      | 0.003     | -0.036    | 0.054      | 0.054 | 0.041 | 0.051 |
| -0.65 | -0.70 | 1.18            | 1.18      | 0.011     | -0.039    | 0.048      | 0.048 | 0.043 | 0.046 |
| -0.60 | -0.70 | 1.15            | 1.15      | 0.033     | -0.021    | 0.049      | 0.049 | 0.044 | 0.044 |
| -0.55 | -0.70 | 1.16            | 1.16      | 0.036     | -0.026    | 0.044      | 0.044 | 0.043 | 0.043 |
| -0.50 | -0.70 | 1.16            | 1.16      | 0.051     | -0.025    | 0.052      | 0.052 | 0.048 | 0.044 |
| -0.40 | -0.70 | 1.13            | 1.13      | 0.049     | -0.013    | 0.052      | 0.052 | 0.041 | 0.038 |
| -0.30 | -0.70 | 1.12            | 1.12      | 0.072     | -0.023    | 0.056      | 0.056 | 0.043 | 0.046 |
| -0.20 | -0.70 | 1.10            | 1.10      | 0.082     | -0.020    | 0.051      | 0.051 | 0.048 | 0.043 |
| -0.10 | -0.70 | 1.06            | 1.06      | 0.075     | -0.021    | 0.052      | 0.054 | 0.043 | 0.041 |
| 0.00  | -0.70 | 1.05            | 1.04      | 0.085     | -0.025    | 0.049      | 0.049 | 0.046 | 0.041 |
| 0.10  | -0.70 | 0.99            | 0.99      | 0.046     | -0.036    | 0.043      | 0.043 | 0.041 | 0.038 |
| 0.20  | -0.70 | 0.99            | 0.99      | 0.056     | -0.038    | 0.043      | 0.043 | 0.046 | 0.034 |
| 0.30  | -0.70 | 0.97            | 0.97      | 0.049     | -0.046    | 0.048      | 0.048 | 0.041 | 0.024 |
| 0.40  | -0.70 | 0.96            | 0.95      | 0.034     | -0.046    | 0.051      | 0.051 | 0.046 | 0.038 |
| 0.50  | -0.70 | 0.94            | 0.94      | 0.036     | -0.043    | 0.051      | 0.051 | 0.038 | 0.036 |
| 0.60  | -0.70 | 0.91            | 0.91      | 0.028     | -0.033    | 0.052      | 0.052 | 0.043 | 0.029 |
| 0.70  | -0.70 | 0.89            | 0.89      | 0.020     | -0.031    | 0.051      | 0.051 | 0.058 | 0.028 |
| 0.80  | -0.70 | 0.86            | 0.85      | 0.016     | -0.033    | 0.063      | 0.063 | 0.061 | 0.041 |
| 0.80  | -0.80 | 0.86            | 0.85      | 0.000     | -0.036    | 0.061      | 0.061 | 0.059 | 0.047 |
| 0.70  | -0.80 | 0.89            | 0.89      | 0.018     | -0.033    | 0.054      | 0.054 | 0.051 | 0.041 |
| 0.60  | -0.80 | 0.92            | 0.92      | 0.016     | -0.043    | 0.048      | 0.048 | 0.046 | 0.035 |
| 0.50  | -0.80 | 0.95            | 0.95      | 0.016     | -0.043    | 0.066      | 0.066 | 0.049 | 0.035 |
| 0.40  | -0.80 | 0.95            | 0.94      | 0.018     | -0.043    | 0.059      | 0.059 | 0.059 | 0.043 |
| 0.30  | -0.80 | 0.97            | 0.96      | 0.035     | -0.058    | 0.049      | 0.049 | 0.063 | 0.049 |
| 0.20  | -0.80 | 0.99            | 0.98      | 0.035     | -0.048    | 0.056      | 0.056 | 0.061 | 0.044 |
| 0.10  | -0.80 | 1.01            | 1.01      | 0.026     | -0.044    | 0.063      | 0.063 | 0.069 | 0.044 |
| 0.00  | -0.80 | 1.04            | 1.03      | 0.057     | -0.030    | 0.072      | 0.071 | 0.077 | 0.056 |
| -0.10 | -0.80 | 1.07            | 1.06      | 0.048     | -0.023    | 0.056      | 0.056 | 0.074 | 0.058 |
| -0.20 | -0.80 | 1.06            | 1.05      | 0.051     | -0.007    | 0.064      | 0.066 | 0.066 | 0.054 |
| -0.30 | -0.80 | 1.10            | 1.10      | 0.051     | -0.002    | 0.067      | 0.067 | 0.067 | 0.054 |
| -0.40 | -0.80 | 1.11            | 1.11      | 0.048     | -0.002    | 0.061      | 0.063 | 0.058 | 0.053 |
| -0.50 | -0.80 | 1.14            | 1.14      | 0.028     | -0.007    | 0.053      | 0.053 | 0.051 | 0.046 |
| -0.55 | -0.80 | 1.15            | 1.14      | 0.003     | -0.010    | 0.049      | 0.049 | 0.043 | 0.051 |
| -0.60 | -0.80 | 1.18            | 1.18      | -0.003    | -0.021    | 0.049      | 0.051 | 0.049 | 0.051 |
| -0.65 | -0.80 | 1.20            | 1.20      | -0.007    | -0.016    | 0.051      | 0.051 | 0.044 | 0.049 |
| -0.70 | -0.80 | 1.18            | 1.18      | -0.016    | -0.013    | 0.056      | 0.056 | 0.046 | 0.046 |
| -0.75 | -0.80 | 1.19            | 1.18      | -0.039    | -0.013    | 0.071      | 0.072 | 0.056 | 0.044 |
| -0.80 | -0.80 | 1.15            | 1.15      | -0.046    | 0.005     | 0.077      | 0.077 | 0.053 | 0.051 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80    | -0.95    | 1.22            | 1.21      | -0.050    | 0.013     | 0.039      | 0.039 | 0.039 | 0.037 |
| -0.75    | -0.95    | 1.22            | 1.22      | -0.037    | 0.013     | 0.039      | 0.039 | 0.039 | 0.029 |
| -0.70    | -0.95    | 1.20            | 1.20      | -0.028    | 0.026     | 0.041      | 0.042 | 0.047 | 0.054 |
| -0.65    | -0.95    | 1.19            | 1.18      | -0.018    | 0.024     | 0.057      | 0.055 | 0.050 | 0.044 |
| -0.60    | -0.95    | 1.13            | 1.12      | -0.002    | 0.021     | 0.094      | 0.096 | 0.047 | 0.047 |
| -0.55    | -0.95    | 1.12            | 1.11      | -0.002    | 0.021     | 0.090      | 0.090 | 0.060 | 0.063 |
| -0.50    | -0.95    | 1.10            | 1.10      | -0.016    | 0.020     | 0.101      | 0.103 | 0.049 | 0.070 |
| -0.40    | -0.95    | 1.04            | 1.03      | 0.015     | 0.016     | 0.091      | 0.091 | 0.075 | 0.063 |
| -0.30    | -0.95    | 1.03            | 1.02      | 0.016     | 0.002     | 0.099      | 0.099 | 0.098 | 0.060 |
| -0.20    | -0.95    | 1.00            | 0.99      | 0.002     | -0.011    | 0.094      | 0.093 | 0.107 | 0.065 |
| -0.10    | -0.95    | 0.94            | 0.94      | 0.026     | -0.028    | 0.088      | 0.088 | 0.078 | 0.068 |
| 0.00     | -0.95    | 0.93            | 0.92      | 0.020     | -0.029    | 0.073      | 0.073 | 0.083 | 0.059 |
| 0.10     | -0.95    | 0.95            | 0.95      | 0.020     | -0.054    | 0.072      | 0.072 | 0.059 | 0.057 |
| 0.20     | -0.95    | 0.96            | 0.95      | 0.010     | -0.050    | 0.055      | 0.055 | 0.059 | 0.052 |
| 0.30     | -0.95    | 0.93            | 0.93      | 0.008     | -0.065    | 0.052      | 0.052 | 0.044 | 0.047 |
| 0.40     | -0.95    | 0.92            | 0.92      | 0.013     | -0.044    | 0.047      | 0.047 | 0.034 | 0.046 |
| 0.50     | -0.95    | 0.90            | 0.90      | 0.005     | -0.037    | 0.041      | 0.041 | 0.047 | 0.036 |
| 0.60     | -0.95    | 0.88            | 0.88      | 0.003     | -0.029    | 0.041      | 0.041 | 0.052 | 0.036 |
| 0.70     | -0.95    | 0.84            | 0.84      | -0.002    | -0.037    | 0.050      | 0.050 | 0.068 | 0.044 |
| 0.80     | -0.95    | 0.81            | 0.80      | -0.011    | -0.031    | 0.067      | 0.065 | 0.083 | 0.050 |
| -0.80    | -0.90    | 1.14            | 1.17      | -0.157    | 0.022     | 0.082      | 0.084 | 0.092 | 0.066 |
| -0.75    | -0.90    | 1.14            | 1.13      | -0.133    | 0.009     | 0.092      | 0.094 | 0.101 | 0.061 |
| -0.70    | -0.90    | 1.14            | 1.12      | -0.160    | 0.003     | 0.092      | 0.094 | 0.099 | 0.055 |
| -0.65    | -0.90    | 1.09            | 1.06      | -0.184    | -0.012    | 0.099      | 0.097 | 0.119 | 0.063 |
| -0.60    | -0.90    | 1.06            | 1.04      | -0.160    | -0.007    | 0.118      | 0.123 | 0.118 | 0.067 |
| -0.55    | -0.90    | 1.10            | 1.00      | -0.147    | -0.009    | 0.099      | 0.099 | 0.121 | 0.061 |
| -0.50    | -0.90    | 1.04            | 1.01      | -0.131    | 0.002     | 0.099      | 0.099 | 0.121 | 0.063 |
| -0.40    | -0.90    | 1.01            | 0.99      | -0.159    | -0.022    | 0.101      | 0.102 | 0.099 | 0.065 |
| -0.30    | -0.90    | 0.98            | 0.96      | -0.165    | -0.010    | 0.095      | 0.101 | 0.114 | 0.068 |
| -0.20    | -0.90    | 1.00            | 0.97      | -0.176    | -0.019    | 0.090      | 0.090 | 0.109 | 0.065 |
| -0.10    | -0.90    | 0.97            | 0.94      | -0.182    | -0.017    | 0.092      | 0.090 | 0.109 | 0.060 |
| 0.00     | -0.90    | 0.95            | 0.93      | -0.155    | -0.029    | 0.087      | 0.089 | 0.097 | 0.058 |
| 0.10     | -0.90    | 0.96            | 0.94      | -0.126    | -0.027    | 0.075      | 0.077 | 0.090 | 0.061 |
| 0.20     | -0.90    | 0.98            | 0.97      | -0.106    | -0.031    | 0.063      | 0.061 | 0.082 | 0.058 |
| 0.30     | -0.90    | 0.92            | 0.91      | -0.078    | -0.038    | 0.075      | 0.075 | 0.078 | 0.055 |
| 0.40     | -0.90    | 0.92            | 0.91      | -0.078    | -0.032    | 0.066      | 0.068 | 0.072 | 0.048 |
| 0.50     | -0.90    | 0.90            | 0.89      | -0.027    | -0.036    | 0.058      | 0.058 | 0.065 | 0.046 |
| 0.60     | -0.90    | 0.90            | 0.89      | 0.017     | -0.031    | 0.061      | 0.061 | 0.044 | 0.046 |
| 0.70     | -0.90    | 0.88            | 0.87      | 0.015     | -0.031    | 0.055      | 0.055 | 0.049 | 0.048 |
| 0.80     | -0.90    | 0.83            | 0.83      | 0.012     | -0.034    | 0.066      | 0.066 | 0.053 | 0.051 |
| -0.80    | -0.93    | 1.10            | 1.06      | -0.244    | 0.008     | 0.107      | 0.112 | 0.120 | 0.059 |
| -0.75    | -0.93    | 1.07            | 1.05      | -0.234    | 0.003     | 0.176      | 0.131 | 0.129 | 0.061 |
| -0.70    | -0.93    | 1.07            | 1.03      | -0.246    | 0.000     | 0.114      | 0.120 | 0.137 | 0.061 |
| -0.65    | -0.93    | 1.07            | 1.05      | -0.210    | 0.000     | 0.112      | 0.119 | 0.127 | 0.061 |
| -0.60    | -0.93    | 1.05            | 1.02      | -0.198    | -0.000    | 0.112      | 0.120 | 0.119 | 0.059 |
| -0.55    | -0.93    | 1.01            | 0.98      | -0.139    | -0.010    | 0.103      | 0.107 | 0.117 | 0.058 |
| -0.50    | -0.93    | 1.00            | 0.96      | -0.243    | -0.012    | 0.110      | 0.114 | 0.120 | 0.071 |
| -0.40    | -0.93    | 0.98            | 0.93      | -0.260    | -0.022    | 0.103      | 0.107 | 0.109 | 0.072 |
| -0.30    | -0.93    | 0.97            | 0.93      | -0.232    | -0.008    | 0.095      | 0.095 | 0.114 | 0.064 |
| -0.20    | -0.93    | 0.95            | 0.91      | -0.227    | -0.007    | 0.097      | 0.098 | 0.107 | 0.058 |
| -0.10    | -0.93    | 0.95            | 0.91      | -0.212    | -0.015    | 0.088      | 0.088 | 0.110 | 0.061 |
| 0.00     | -0.93    | 0.93            | 0.90      | -0.193    | -0.025    | 0.097      | 0.095 | 0.098 | 0.061 |
| 0.10     | -0.93    | 0.93            | 0.91      | -0.179    | -0.025    | 0.036      | 0.036 | 0.034 | 0.029 |
| 0.20     | -0.93    | 0.93            | 0.92      | -0.144    | -0.020    | 0.071      | 0.071 | 0.087 | 0.054 |
| 0.30     | -0.93    | 0.90            | 0.88      | -0.119    | -0.025    | 0.073      | 0.071 | 0.080 | 0.054 |
| 0.40     | -0.93    | 0.90            | 0.89      | -0.095    | -0.024    | 0.066      | 0.066 | 0.092 | 0.054 |
| 0.50     | -0.93    | 0.88            | 0.88      | -0.039    | -0.039    | 0.059      | 0.059 | 0.064 | 0.042 |
| 0.55     | -0.93    | 0.87            | 0.87      | 0.007     | -0.034    | 0.064      | 0.064 | 0.056 | 0.042 |
| 0.60     | -0.93    | 0.87            | 0.87      | 0.017     | -0.032    | 0.064      | 0.064 | 0.044 | 0.042 |
| 0.65     | -0.93    | 0.86            | 0.86      | 0.017     | -0.027    | 0.068      | 0.068 | 0.046 | 0.047 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.70     | -0.93    | 0.86            | 0.86      | 0.019     | -0.034    | 0.064      | 0.064 | 0.047 | 0.046 |
| 0.80     | -0.93    | 0.82            | 0.82      | 0.010     | -0.031    | 0.063      | 0.063 | 0.047 | 0.046 |
| -0.80    | -0.95    | 1.01            | 0.94      | -0.329    | 0.023     | 0.144      | 0.148 | 0.116 | 0.065 |
| -0.75    | -0.95    | 1.04            | 0.98      | -0.335    | -0.007    | 0.129      | 0.132 | 0.117 | 0.065 |
| -0.70    | -0.95    | 1.03            | 0.95      | -0.376    | -0.003    | 0.116      | 0.124 | 0.107 | 0.069 |
| -0.65    | -0.95    | 1.04            | 0.97      | -0.357    | -0.005    | 0.122      | 0.122 | 0.112 | 0.064 |
| -0.60    | -0.95    | 0.96            | 0.90      | -0.307    | -0.005    | 0.116      | 0.116 | 0.121 | 0.070 |
| -0.55    | -0.95    | 0.99            | 0.92      | -0.329    | -0.012    | 0.124      | 0.124 | 0.134 | 0.065 |
| -0.50    | -0.95    | 0.97            | 0.91      | -0.320    | -0.013    | 0.134      | 0.141 | 0.127 | 0.069 |
| -0.40    | -0.95    | 0.93            | 0.88      | -0.277    | -0.003    | 0.126      | 0.126 | 0.131 | 0.067 |
| -0.30    | -0.95    | 0.96            | 0.90      | -0.310    | -0.010    | 0.144      | 0.148 | 0.112 | 0.064 |
| -0.20    | -0.95    | 0.94            | 0.88      | -0.305    | -0.015    | 0.107      | 0.107 | 0.101 | 0.059 |
| -0.10    | -0.95    | 0.91            | 0.85      | -0.272    | -0.013    | 0.106      | 0.109 | 0.101 | 0.065 |
| 0.00     | -0.75    | 0.74            | 0.90      | -0.235    | -0.023    | 0.112      | 0.112 | 0.086 | 0.060 |
| 0.10     | -0.95    | 0.89            | 0.86      | -0.223    | -0.025    | 0.114      | 0.114 | 0.092 | 0.051 |
| 0.20     | -0.75    | 0.97            | 0.90      | -0.210    | -0.022    | 0.092      | 0.094 | 0.080 | 0.050 |
| 0.30     | 0.95     | 0.92            | 0.89      | -0.186    | -0.022    | 0.119      | 0.122 | 0.084 | 0.049 |
| 0.40     | 0.95     | 0.89            | 0.88      | -0.149    | -0.029    | 0.119      | 0.121 | 0.077 | 0.054 |
| 0.50     | 0.95     | 0.88            | 0.87      | -0.065    | -0.023    | 0.124      | 0.124 | 0.086 | 0.050 |
| 0.60     | 0.75     | 0.85            | 0.85      | -0.017    | -0.025    | 0.080      | 0.080 | 0.064 | 0.047 |
| 0.70     | 0.95     | 0.81            | 0.82      | -0.008    | -0.027    | 0.070      | 0.070 | 0.052 | 0.050 |
| 0.80     | 0.95     | 0.80            | 0.79      | -0.003    | -0.030    | 0.074      | 0.074 | 0.064 | 0.047 |
| 0.80     | -0.76    | 0.98            | 0.89      | -0.388    | 0.007     | 0.137      | 0.134 | 0.117 | 0.065 |
| -0.75    | -0.96    | 0.98            | 0.89      | -0.377    | -0.005    | 0.131      | 0.134 | 0.122 | 0.065 |
| -0.70    | -0.96    | 0.99            | 0.90      | -0.388    | -0.007    | 0.111      | 0.121 | 0.104 | 0.067 |
| -0.65    | -0.96    | 0.97            | 0.90      | -0.303    | -0.012    | 0.126      | 0.129 | 0.162 | 0.069 |
| -0.60    | -0.96    | 0.97            | 0.88      | -0.380    | -0.010    | 0.114      | 0.116 | 0.114 | 0.059 |
| -0.55    | -0.96    | 0.95            | 0.86      | -0.388    | -0.005    | 0.104      | 0.107 | 0.100 | 0.070 |
| -0.50    | -0.96    | 0.95            | 0.86      | -0.380    | -0.008    | 0.124      | 0.134 | 0.099 | 0.065 |
| -0.40    | -0.96    | 0.92            | 0.84      | -0.343    | -0.008    | 0.121      | 0.121 | 0.111 | 0.059 |
| -0.30    | -0.96    | 0.94            | 0.87      | -0.340    | -0.017    | 0.129      | 0.137 | 0.102 | 0.060 |
| -0.20    | -0.96    | 0.93            | 0.87      | -0.315    | -0.017    | 0.124      | 0.127 | 0.097 | 0.057 |
| -0.10    | -0.96    | 0.92            | 0.85      | -0.311    | -0.015    | 0.117      | 0.122 | 0.089 | 0.057 |
| 0.00     | -0.96    | 0.92            | 0.87      | -0.275    | -0.018    | 0.122      | 0.129 | 0.095 | 0.060 |
| 0.10     | -0.96    | 0.90            | 0.86      | -0.248    | -0.012    | 0.116      | 0.119 | 0.094 | 0.047 |
| 0.20     | -0.96    | 0.92            | 0.89      | -0.224    | -0.018    | 0.121      | 0.121 | 0.085 | 0.050 |
| 0.30     | -0.76    | 0.88            | 0.86      | -0.179    | -0.025    | 0.102      | 0.105 | 0.077 | 0.050 |
| 0.40     | -0.76    | 0.89            | 0.87      | -0.161    | -0.018    | 0.114      | 0.116 | 0.075 | 0.050 |
| 0.50     | -0.76    | 0.86            | 0.85      | -0.092    | -0.028    | 0.114      | 0.114 | 0.089 | 0.052 |
| 0.60     | -0.76    | 0.82            | 0.82      | -0.003    | -0.032    | 0.102      | 0.104 | 0.049 | 0.054 |
| 0.70     | -0.76    | 0.82            | 0.82      | 0.008     | -0.025    | 0.077      | 0.077 | 0.050 | 0.047 |
| 0.80     | -0.76    | 0.79            | 0.79      | 0.013     | -0.037    | 0.077      | 0.077 | 0.050 | 0.044 |
| 0.70     | 0.00     | 0.89            | 0.89      | 0.018     | 0.005     | 0.051      | 0.054 | 0.050 | 0.041 |
| 0.60     | 0.00     | 0.92            | 0.92      | 0.012     | 0.000     | 0.051      | 0.053 | 0.046 | 0.038 |
| 0.50     | 0.00     | 0.94            | 0.94      | 0.020     | 0.003     | 0.050      | 0.050 | 0.038 | 0.035 |
| 0.40     | 0.00     | 0.75            | 0.75      | 0.030     | -0.007    | 0.046      | 0.046 | 0.038 | 0.033 |
| 0.30     | 0.00     | 1.00            | 1.00      | 0.031     | -0.007    | 0.046      | 0.046 | 0.038 | 0.030 |
| 0.20     | 0.00     | 1.01            | 1.01      | 0.073     | -0.007    | 0.054      | 0.054 | 0.038 | 0.030 |
| 0.10     | 0.00     | 1.02            | 1.02      | 0.046     | -0.003    | 0.045      | 0.046 | 0.036 | 0.027 |
| 0.00     | 0.00     | 1.04            | 1.04      | 0.041     | -0.010    | 0.053      | 0.053 | 0.040 | 0.038 |
| -0.10    | 0.00     | 1.06            | 1.05      | 0.051     | -0.005    | 0.048      | 0.048 | 0.036 | 0.030 |
| -0.20    | 0.00     | 1.07            | 1.06      | 0.053     | -0.017    | 0.053      | 0.057 | 0.036 | 0.036 |
| -0.30    | 0.00     | 1.10            | 1.10      | 0.056     | -0.013    | 0.053      | 0.053 | 0.040 | 0.035 |
| -0.40    | 0.00     | 1.12            | 1.11      | 0.061     | -0.015    | 0.051      | 0.051 | 0.041 | 0.036 |
| -0.50    | 0.00     | 1.16            | 1.16      | 0.069     | -0.026    | 0.046      | 0.048 | 0.041 | 0.041 |
| -0.55    | 0.00     | 1.17            | 1.16      | 0.074     | -0.021    | 0.046      | 0.048 | 0.041 | 0.038 |
| -0.60    | 0.00     | 1.16            | 1.15      | 0.069     | -0.012    | 0.050      | 0.050 | 0.041 | 0.033 |
| -0.65    | 0.00     | 1.18            | 1.18      | 0.074     | -0.021    | 0.054      | 0.054 | 0.041 | 0.041 |
| -0.70    | 0.00     | 1.21            | 1.20      | 0.073     | -0.018    | 0.050      | 0.050 | 0.035 | 0.043 |
| -0.75    | 0.00     | 1.22            | 1.22      | 0.066     | -0.023    | 0.043      | 0.043 | 0.035 | 0.040 |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.80 | 0.00 | 1.23            | 1.22      | 0.063     | -0.015    | 0.054            | 0.056 | 0.035 | 0.038 |
| -0.80 | 0.10 | 1.24            | 1.24      | 0.071     | -0.015    | 0.053            | 0.053 | 0.033 | 0.041 |
| -0.75 | 0.10 | 1.21            | 1.21      | 0.071     | -0.018    | 0.048            | 0.048 | 0.038 | 0.040 |
| -0.70 | 0.10 | 1.21            | 1.20      | 0.068     | -0.020    | 0.048            | 0.048 | 0.040 | 0.040 |
| -0.65 | 0.10 | 1.19            | 1.19      | 0.078     | -0.018    | 0.048            | 0.048 | 0.041 | 0.038 |
| -0.60 | 0.10 | 1.16            | 1.16      | 0.076     | -0.012    | 0.048            | 0.050 | 0.036 | 0.035 |
| -0.55 | 0.10 | 1.15            | 1.15      | 0.064     | -0.013    | 0.046            | 0.046 | 0.040 | 0.035 |
| -0.50 | 0.10 | 1.16            | 1.16      | 0.061     | -0.012    | 0.046            | 0.046 | 0.041 | 0.036 |
| -0.40 | 0.10 | 1.11            | 1.11      | 0.058     | -0.010    | 0.043            | 0.043 | 0.040 | 0.030 |
| -0.30 | 0.10 | 1.10            | 1.10      | 0.046     | -0.012    | 0.045            | 0.045 | 0.041 | 0.030 |
| -0.20 | 0.10 | 1.08            | 1.07      | 0.048     | -0.008    | 0.041            | 0.041 | 0.043 | 0.030 |
| -0.10 | 0.10 | 1.07            | 1.07      | 0.045     | -0.008    | 0.041            | 0.043 | 0.041 | 0.030 |
| 0.00  | 0.10 | 1.03            | 1.03      | 0.031     | -0.005    | 0.040            | 0.040 | 0.038 | 0.028 |
| 0.10  | 0.10 | 1.02            | 1.02      | 0.033     | 0.002     | 0.038            | 0.038 | 0.038 | 0.027 |
| 0.20  | 0.10 | 0.99            | 0.99      | 0.035     | 0.005     | 0.041            | 0.041 | 0.038 | 0.027 |
| 0.30  | 0.10 | 0.98            | 0.98      | 0.027     | -0.002    | 0.041            | 0.043 | 0.038 | 0.028 |
| 0.40  | 0.10 | 0.95            | 0.95      | 0.022     | 0.002     | 0.045            | 0.045 | 0.076 | 0.028 |
| 0.50  | 0.10 | 0.93            | 0.93      | 0.013     | 0.002     | 0.045            | 0.045 | 0.046 | 0.030 |
| 0.60  | 0.10 | 0.93            | 0.93      | 0.013     | -0.002    | 0.051            | 0.053 | 0.050 | 0.035 |
| 0.70  | 0.10 | 0.88            | 0.88      | 0.013     | 0.005     | 0.056            | 0.056 | 0.045 | 0.036 |
| 0.80  | 0.10 | 0.86            | 0.85      | 0.007     | 0.003     | 0.060            | 0.061 | 0.060 | 0.046 |
| 0.80  | 0.20 | 0.86            | 0.85      | 0.005     | 0.012     | 0.060            | 0.060 | 0.053 | 0.045 |
| 0.70  | 0.20 | 0.87            | 0.89      | 0.002     | 0.005     | 0.058            | 0.060 | 0.055 | 0.030 |
| 0.60  | 0.20 | 0.92            | 0.92      | 0.013     | 0.008     | 0.046            | 0.046 | 0.043 | 0.030 |
| 0.50  | 0.20 | 0.94            | 0.94      | 0.015     | 0.008     | 0.046            | 0.046 | 0.043 | 0.027 |
| 0.40  | 0.20 | 0.76            | 0.76      | 0.023     | 0.002     | 0.045            | 0.045 | 0.036 | 0.035 |
| 0.30  | 0.20 | 0.97            | 0.97      | 0.030     | 0.005     | 0.040            | 0.040 | 0.040 | 0.022 |
| 0.20  | 0.20 | 1.01            | 1.01      | 0.035     | 0.000     | 0.045            | 0.045 | 0.038 | 0.030 |
| 0.10  | 0.20 | 1.07            | 1.02      | 0.078     | -0.003    | 0.040            | 0.041 | 0.038 | 0.030 |
| 0.00  | 0.20 | 1.04            | 1.03      | 0.045     | -0.003    | 0.045            | 0.045 | 0.040 | 0.036 |
| -0.10 | 0.20 | 1.07            | 1.07      | 0.053     | -0.005    | 0.047            | 0.043 | 0.040 | 0.036 |
| -0.20 | 0.20 | 1.08            | 1.08      | 0.051     | -0.007    | 0.046            | 0.046 | 0.035 | 0.031 |
| -0.30 | 0.20 | 1.12            | 1.12      | 0.060     | -0.008    | 0.043            | 0.043 | 0.040 | 0.036 |
| -0.40 | 0.20 | 1.12            | 1.12      | 0.066     | -0.005    | 0.043            | 0.045 | 0.041 | 0.035 |
| -0.50 | 0.20 | 1.15            | 1.15      | 0.075     | -0.007    | 0.048            | 0.048 | 0.041 | 0.036 |
| -0.55 | 0.20 | 1.17            | 1.17      | 0.076     | -0.005    | 0.051            | 0.051 | 0.036 | 0.031 |
| -0.60 | 0.20 | 1.18            | 1.17      | 0.071     | -0.010    | 0.050            | 0.050 | 0.040 | 0.036 |
| -0.65 | 0.20 | 1.18            | 1.17      | 0.073     | -0.012    | 0.043            | 0.043 | 0.040 | 0.035 |
| -0.70 | 0.20 | 1.20            | 1.19      | 0.080     | -0.015    | 0.051            | 0.051 | 0.040 | 0.036 |
| -0.75 | 0.20 | 1.22            | 1.22      | 0.071     | -0.022    | 0.046            | 0.046 | 0.040 | 0.041 |
| -0.80 | 0.20 | 1.23            | 1.22      | 0.073     | -0.020    | 0.046            | 0.046 | 0.038 | 0.035 |
| -0.80 | 0.30 | 1.23            | 1.23      | 0.084     | -0.017    | 0.053            | 0.055 | 0.036 | 0.036 |
| -0.75 | 0.30 | 1.22            | 1.22      | 0.081     | -0.010    | 0.043            | 0.043 | 0.038 | 0.038 |
| -0.70 | 0.30 | 1.20            | 1.20      | 0.081     | -0.007    | 0.050            | 0.051 | 0.040 | 0.038 |
| -0.65 | 0.30 | 1.19            | 1.18      | 0.078     | -0.010    | 0.045            | 0.046 | 0.038 | 0.038 |
| -0.60 | 0.30 | 1.17            | 1.16      | 0.073     | -0.005    | 0.046            | 0.046 | 0.041 | 0.036 |
| -0.55 | 0.30 | 1.17            | 1.16      | 0.076     | -0.007    | 0.043            | 0.043 | 0.043 | 0.036 |
| -0.50 | 0.30 | 1.16            | 1.15      | 0.066     | -0.007    | 0.040            | 0.041 | 0.036 | 0.038 |
| -0.40 | 0.30 | 1.15            | 1.15      | 0.066     | -0.008    | 0.045            | 0.047 | 0.042 | 0.040 |
| -0.30 | 0.30 | 1.12            | 1.12      | 0.057     | -0.002    | 0.044            | 0.044 | 0.040 | 0.032 |
| -0.20 | 0.30 | 1.09            | 1.09      | 0.047     | 0.002     | 0.039            | 0.039 | 0.037 | 0.030 |
| -0.10 | 0.30 | 1.07            | 1.07      | 0.039     | 0.003     | 0.037            | 0.039 | 0.040 | 0.030 |
| 0.00  | 0.30 | 1.05            | 1.05      | 0.039     | 0.008     | 0.035            | 0.035 | 0.045 | 0.027 |
| 0.10  | 0.30 | 1.03            | 1.03      | 0.039     | 0.013     | 0.034            | 0.034 | 0.040 | 0.025 |
| 0.20  | 0.30 | 1.02            | 1.02      | 0.030     | 0.013     | 0.034            | 0.034 | 0.042 | 0.027 |
| 0.30  | 0.30 | 0.99            | 0.99      | 0.027     | 0.013     | 0.034            | 0.034 | 0.044 | 0.024 |
| 0.40  | 0.30 | 0.97            | 0.97      | 0.022     | 0.017     | 0.034            | 0.034 | 0.042 | 0.020 |
| 0.50  | 0.30 | 0.95            | 0.94      | 0.010     | 0.015     | 0.029            | 0.029 | 0.040 | 0.020 |
| 0.60  | 0.30 | 0.94            | 0.94      | 0.010     | 0.020     | 0.029            | 0.029 | 0.044 | 0.027 |
| 0.70  | 0.30 | 0.90            | 0.90      | 0.010     | 0.022     | 0.042            | 0.044 | 0.052 | 0.034 |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.30 | 0.86            | 0.86      | -0.007    | 0.019     | 0.059      | 0.059 | 0.064 | 0.045 |
| 0.80  | 0.40 | 0.67            | 0.66      | 0.002     | 0.015     | 0.056      | 0.056 | 0.057 | 0.035 |
| 0.70  | 0.40 | 0.69            | 0.69      | -0.002    | 0.015     | 0.037      | 0.039 | 0.045 | 0.027 |
| 0.60  | 0.40 | 0.71            | 0.71      | -0.002    | 0.020     | 0.042      | 0.044 | 0.050 | 0.029 |
| 0.50  | 0.40 | 0.67            | 0.67      | 0.007     | 0.015     | 0.027      | 0.027 | 0.037 | 0.017 |
| 0.40  | 0.40 | 0.70            | 0.70      | 0.003     | 0.010     | 0.030      | 0.030 | 0.040 | 0.020 |
| 0.30  | 0.40 | 0.72            | 0.72      | 0.012     | 0.010     | 0.029      | 0.029 | 0.039 | 0.019 |
| 0.20  | 0.40 | 0.72            | 0.72      | 0.015     | 0.015     | 0.025      | 0.025 | 0.040 | 0.019 |
| 0.10  | 0.40 | 0.73            | 0.73      | 0.019     | 0.010     | 0.025      | 0.025 | 0.039 | 0.017 |
| 0.00  | 0.40 | 0.76            | 0.76      | 0.019     | 0.010     | 0.027      | 0.027 | 0.037 | 0.019 |
| -0.10 | 0.40 | 0.77            | 0.77      | 0.029     | 0.008     | 0.029      | 0.029 | 0.039 | 0.019 |
| -0.20 | 0.40 | 0.77            | 0.79      | 0.032     | 0.012     | 0.030      | 0.030 | 0.035 | 0.020 |
| -0.30 | 0.40 | 0.82            | 0.82      | 0.037     | 0.008     | 0.030      | 0.030 | 0.037 | 0.020 |
| -0.40 | 0.40 | 0.83            | 0.83      | 0.042     | 0.013     | 0.034      | 0.034 | 0.037 | 0.019 |
| -0.50 | 0.40 | 1.17            | 1.17      | 0.076     | 0.008     | 0.045      | 0.045 | 0.042 | 0.030 |
| -0.55 | 0.40 | 1.17            | 1.17      | 0.079     | 0.007     | 0.045      | 0.045 | 0.040 | 0.035 |
| -0.60 | 0.40 | 1.18            | 1.18      | 0.082     | 0.010     | 0.040      | 0.042 | 0.040 | 0.037 |
| -0.65 | 0.40 | 1.20            | 1.19      | 0.090     | 0.002     | 0.040      | 0.042 | 0.032 | 0.047 |
| -0.70 | 0.40 | 1.22            | 1.21      | 0.099     | 0.007     | 0.042      | 0.047 | 0.035 | 0.040 |
| -0.75 | 0.40 | 1.23            | 1.22      | 0.100     | 0.010     | 0.042      | 0.042 | 0.033 | 0.042 |
| -0.80 | 0.40 | 1.17            | 1.17      | 0.090     | -0.025    | 0.095      | 0.077 | 0.043 | 0.059 |
| -0.80 | 0.50 | 1.08            | 1.08      | 0.060     | -0.055    | 0.102      | 0.102 | 0.043 | 0.055 |
| -0.75 | 0.50 | 1.22            | 1.21      | 0.087     | 0.013     | 0.065      | 0.065 | 0.042 | 0.047 |
| -0.70 | 0.50 | 1.21            | 1.21      | 0.084     | 0.020     | 0.040      | 0.042 | 0.033 | 0.040 |
| -0.65 | 0.50 | 1.19            | 1.19      | 0.077     | 0.015     | 0.035      | 0.035 | 0.037 | 0.040 |
| -0.60 | 0.50 | 1.18            | 1.18      | 0.077     | 0.018     | 0.038      | 0.040 | 0.030 | 0.033 |
| -0.55 | 0.50 | 1.17            | 1.17      | 0.067     | 0.013     | 0.045      | 0.045 | 0.037 | 0.040 |
| -0.50 | 0.50 | 1.17            | 1.17      | 0.069     | 0.005     | 0.037      | 0.037 | 0.035 | 0.037 |
| -0.40 | 0.50 | 1.14            | 1.14      | 0.067     | 0.003     | 0.038      | 0.038 | 0.077 | 0.030 |
| -0.30 | 0.50 | 1.11            | 1.10      | 0.060     | 0.002     | 0.043      | 0.043 | 0.035 | 0.028 |
| -0.20 | 0.50 | 1.08            | 1.08      | 0.054     | 0.005     | 0.035      | 0.035 | 0.032 | 0.027 |
| -0.10 | 0.50 | 1.06            | 1.06      | 0.045     | 0.005     | 0.027      | 0.027 | 0.030 | 0.025 |
| 0.00  | 0.50 | 1.04            | 1.04      | 0.030     | 0.007     | 0.030      | 0.032 | 0.032 | 0.027 |
| 0.10  | 0.50 | 1.02            | 1.02      | 0.030     | 0.010     | 0.033      | 0.033 | 0.030 | 0.025 |
| 0.20  | 0.50 | 1.00            | 1.00      | 0.020     | 0.017     | 0.028      | 0.028 | 0.030 | 0.023 |
| 0.30  | 0.50 | 0.97            | 0.97      | 0.013     | 0.013     | 0.030      | 0.070 | 0.028 | 0.029 |
| 0.40  | 0.50 | 0.95            | 0.95      | 0.002     | 0.010     | 0.030      | 0.030 | 0.022 | 0.027 |
| 0.50  | 0.50 | 0.92            | 0.92      | -0.002    | 0.007     | 0.035      | 0.035 | 0.042 | 0.033 |
| 0.60  | 0.50 | 0.89            | 0.89      | 0.007     | 0.015     | 0.050      | 0.052 | 0.042 | 0.035 |
| 0.70  | 0.50 | 0.86            | 0.86      | 0.007     | 0.010     | 0.050      | 0.052 | 0.049 | 0.033 |
| 0.80  | 0.50 | 0.83            | 0.83      | 0.005     | 0.012     | 0.055      | 0.055 | 0.055 | 0.038 |
| 0.80  | 0.60 | 0.84            | 0.83      | 0.007     | 0.022     | 0.047      | 0.047 | 0.060 | 0.040 |
| 0.70  | 0.60 | 0.85            | 0.85      | 0.007     | 0.010     | 0.040      | 0.040 | 0.049 | 0.031 |
| 0.60  | 0.60 | 0.83            | 0.83      | 0.005     | -0.005    | 0.050      | 0.050 | 0.049 | 0.028 |
| 0.50  | 0.60 | 0.90            | 0.90      | 0.008     | 0.005     | 0.035      | 0.037 | 0.037 | 0.028 |
| 0.40  | 0.60 | 0.93            | 0.93      | 0.007     | 0.003     | 0.043      | 0.043 | 0.040 | 0.018 |
| 0.30  | 0.60 | 0.99            | 0.98      | 0.008     | 0.003     | 0.043      | 0.043 | 0.032 | 0.032 |
| 0.20  | 0.60 | 1.07            | 1.07      | 0.048     | 0.003     | 0.037      | 0.037 | 0.033 | 0.032 |
| 0.10  | 0.60 | 1.00            | 1.00      | 0.037     | 0.020     | 0.033      | 0.033 | 0.033 | 0.028 |
| 0.00  | 0.60 | 1.04            | 1.04      | 0.028     | 0.010     | 0.035      | 0.035 | 0.032 | 0.035 |
| -0.10 | 0.60 | 1.05            | 1.04      | 0.038     | 0.007     | 0.033      | 0.033 | 0.033 | 0.028 |
| -0.20 | 0.60 | 1.07            | 1.07      | 0.048     | 0.003     | 0.037      | 0.037 | 0.033 | 0.032 |
| -0.30 | 0.60 | 1.10            | 1.10      | 0.053     | 0.005     | 0.037      | 0.037 | 0.033 | 0.033 |
| -0.40 | 0.60 | 1.13            | 1.12      | 0.061     | 0.008     | 0.032      | 0.032 | 0.037 | 0.030 |
| -0.50 | 0.60 | 1.16            | 1.15      | 0.063     | 0.012     | 0.038      | 0.038 | 0.037 | 0.035 |
| -0.55 | 0.60 | 1.15            | 1.15      | 0.060     | 0.020     | 0.033      | 0.033 | 0.033 | 0.033 |
| -0.60 | 0.60 | 1.19            | 1.18      | 0.060     | 0.072     | 0.033      | 0.033 | 0.038 | 0.038 |
| -0.65 | 0.60 | 1.19            | 1.19      | 0.071     | 0.030     | 0.035      | 0.035 | 0.033 | 0.035 |
| -0.70 | 0.60 | 1.20            | 1.20      | 0.065     | 0.022     | 0.041      | 0.041 | 0.037 | 0.041 |
| -0.75 | 0.60 | 1.15            | 1.15      | 0.056     | 0.007     | 0.065      | 0.065 | 0.045 | 0.045 |

| <i>y</i> | <i>z</i> | $\bar{U}$ rms | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'$ rms | $u'$  | $v'$  | $w'$  |
|----------|----------|---------------|-----------|-----------|-----------|----------|-------|-------|-------|
| -0.80    | 0.60     | 1.06          | 1.06      | 0.038     | -0.032    | 0.068    | 0.068 | 0.046 | 0.048 |
| -0.80    | 0.70     | 1.09          | 1.08      | 0.018     | -0.040    | 0.056    | 0.058 | 0.045 | 0.043 |
| -0.75    | 0.70     | 1.15          | 1.15      | 0.022     | -0.013    | 0.055    | 0.055 | 0.041 | 0.041 |
| -0.70    | 0.70     | 1.18          | 1.18      | 0.040     | 0.008     | 0.041    | 0.041 | 0.040 | 0.041 |
| -0.65    | 0.70     | 1.19          | 1.19      | 0.035     | 0.018     | 0.032    | 0.032 | 0.035 | 0.038 |
| -0.60    | 0.70     | 1.18          | 1.18      | 0.045     | 0.018     | 0.033    | 0.033 | 0.037 | 0.041 |
| -0.55    | 0.70     | 1.18          | 1.18      | 0.056     | 0.017     | 0.035    | 0.035 | 0.040 | 0.035 |
| -0.50    | 0.70     | 1.16          | 1.16      | 0.060     | 0.012     | 0.038    | 0.038 | 0.037 | 0.035 |
| -0.40    | 0.70     | 1.14          | 1.14      | 0.053     | 0.010     | 0.033    | 0.033 | 0.040 | 0.035 |
| -0.30    | 0.70     | 1.11          | 1.10      | 0.043     | 0.010     | 0.037    | 0.037 | 0.040 | 0.030 |
| -0.20    | 0.70     | 1.08          | 1.08      | 0.032     | 0.013     | 0.035    | 0.035 | 0.037 | 0.030 |
| -0.10    | 0.70     | 1.05          | 1.04      | 0.028     | 0.013     | 0.033    | 0.033 | 0.037 | 0.025 |
| 0.00     | 0.70     | 0.99          | 0.99      | 0.028     | 0.012     | 0.045    | 0.045 | 0.037 | 0.025 |
| 0.10     | 0.70     | 0.96          | 0.96      | 0.018     | 0.003     | 0.041    | 0.041 | 0.038 | 0.032 |
| 0.20     | 0.70     | 0.94          | 0.94      | 0.018     | 0.007     | 0.045    | 0.045 | 0.037 | 0.032 |
| 0.30     | 0.70     | 0.91          | 0.91      | 0.017     | 0.013     | 0.037    | 0.037 | 0.038 | 0.027 |
| 0.40     | 0.70     | 0.89          | 0.89      | 0.012     | 0.015     | 0.037    | 0.037 | 0.038 | 0.028 |
| 0.50     | 0.70     | 0.88          | 0.88      | 0.012     | 0.012     | 0.037    | 0.037 | 0.037 | 0.030 |
| 0.60     | 0.70     | 0.87          | 0.87      | 0.008     | 0.012     | 0.038    | 0.038 | 0.040 | 0.027 |
| 0.70     | 0.70     | 0.85          | 0.84      | 0.012     | 0.002     | 0.047    | 0.047 | 0.052 | 0.037 |
| 0.80     | 0.70     | 0.82          | 0.82      | 0.010     | 0.010     | 0.054    | 0.054 | 0.054 | 0.045 |
| 0.80     | 0.80     | 0.80          | 0.79      | -0.018    | 0.012     | 0.066    | 0.067 | 0.069 | 0.047 |
| 0.70     | 0.80     | 0.85          | 0.85      | -0.012    | 0.007     | 0.047    | 0.049 | 0.059 | 0.040 |
| 0.60     | 0.80     | 0.87          | 0.86      | -0.002    | 0.007     | 0.049    | 0.049 | 0.055 | 0.040 |
| 0.50     | 0.80     | 0.90          | 0.90      | 0.000     | 0.007     | 0.050    | 0.050 | 0.045 | 0.035 |
| 0.40     | 0.80     | 0.92          | 0.92      | 0.003     | 0.007     | 0.045    | 0.045 | 0.047 | 0.039 |
| 0.30     | 0.80     | 0.93          | 0.93      | 0.005     | 0.012     | 0.049    | 0.049 | 0.044 | 0.036 |
| 0.20     | 0.80     | 0.93          | 0.93      | 0.010     | 0.008     | 0.045    | 0.045 | 0.050 | 0.039 |
| 0.10     | 0.80     | 0.96          | 0.96      | 0.007     | 0.012     | 0.047    | 0.049 | 0.045 | 0.039 |
| 0.00     | 0.80     | 0.98          | 0.97      | 0.015     | 0.007     | 0.045    | 0.045 | 0.055 | 0.037 |
| -0.10    | 0.80     | 1.00          | 0.99      | 0.022     | -0.007    | 0.050    | 0.050 | 0.059 | 0.047 |
| -0.20    | 0.80     | 1.04          | 1.03      | 0.030     | -0.013    | 0.049    | 0.049 | 0.066 | 0.054 |
| -0.30    | 0.80     | 1.03          | 1.07      | 0.042     | -0.013    | 0.054    | 0.054 | 0.074 | 0.054 |
| -0.40    | 0.80     | 1.14          | 1.14      | 0.049     | -0.010    | 0.057    | 0.057 | 0.069 | 0.055 |
| -0.50    | 0.80     | 1.15          | 1.14      | 0.052     | -0.007    | 0.052    | 0.052 | 0.057 | 0.052 |
| -0.55    | 0.80     | 1.17          | 1.17      | 0.024     | -0.005    | 0.052    | 0.052 | 0.060 | 0.049 |
| -0.60    | 0.80     | 1.18          | 1.18      | 0.025     | -0.005    | 0.059    | 0.059 | 0.057 | 0.052 |
| -0.65    | 0.30     | 1.19          | 1.19      | 0.010     | -0.007    | 0.059    | 0.059 | 0.066 | 0.050 |
| -0.70    | 0.80     | 1.19          | 1.19      | -0.007    | -0.013    | 0.064    | 0.064 | 0.062 | 0.052 |
| -0.75    | 0.80     | 1.17          | 1.17      | -0.027    | -0.032    | 0.064    | 0.064 | 0.066 | 0.052 |
| -0.80    | 0.80     | 1.15          | 1.14      | -0.039    | -0.074    | 0.064    | 0.066 | 0.064 | 0.059 |
| -0.80    | 0.80     | 1.14          | 1.13      | -0.045    | -0.070    | 0.066    | 0.068 | 0.070 | 0.053 |
| -0.80    | 0.70     | 1.09          | 1.08      | 0.028     | -0.048    | 0.068    | 0.068 | 0.050 | 0.040 |
| -0.80    | 0.60     | 1.09          | 1.09      | 0.051     | -0.028    | 0.083    | 0.085 | 0.050 | 0.058 |
| -0.80    | 0.50     | 1.10          | 1.10      | 0.075     | -0.028    | 0.106    | 0.108 | 0.053 | 0.058 |
| -0.80    | 0.40     | 1.19          | 1.18      | 0.038     | -0.017    | 0.068    | 0.068 | 0.045 | 0.048 |
| -0.80    | 0.30     | 1.22          | 1.21      | 0.090     | -0.012    | 0.055    | 0.056 | 0.036 | 0.036 |
| -0.80    | 0.20     | 1.20          | 1.20      | 0.076     | -0.020    | 0.046    | 0.046 | 0.036 | 0.040 |
| -0.80    | 0.10     | 1.22          | 1.22      | 0.065     | -0.025    | 0.051    | 0.051 | 0.036 | 0.038 |
| -0.80    | 0.00     | 1.21          | 1.21      | 0.056     | -0.025    | 0.045    | 0.046 | 0.040 | 0.046 |
| -0.80    | -0.10    | 1.21          | 1.21      | 0.061     | -0.020    | 0.045    | 0.045 | 0.038 | 0.040 |
| -0.80    | -0.20    | 1.20          | 1.19      | 0.061     | -0.023    | 0.050    | 0.050 | 0.040 | 0.036 |
| -0.80    | -0.30    | 1.22          | 1.21      | 0.070     | -0.030    | 0.050    | 0.050 | 0.041 | 0.041 |
| -0.80    | -0.40    | 1.21          | 1.20      | 0.076     | -0.036    | 0.071    | 0.071 | 0.045 | 0.046 |
| -0.80    | -0.50    | 1.10          | 1.09      | 0.043     | -0.040    | 0.123    | 0.124 | 0.061 | 0.055 |
| -0.80    | -0.60    | 1.11          | 1.11      | 0.013     | -0.028    | 0.099    | 0.099 | 0.058 | 0.056 |
| -0.80    | -0.70    | 1.13          | 1.12      | -0.022    | -0.002    | 0.086    | 0.086 | 0.048 | 0.050 |
| -0.80    | -0.80    | 1.13          | 1.13      | -0.053    | 0.007     | 0.068    | 0.068 | 0.055 | 0.045 |
| -0.85    | 0.80     | 1.15          | 1.15      | -0.044    | -0.062    | 0.059    | 0.062 | 0.083 | 0.048 |
| -0.85    | 0.70     | 1.12          | 1.12      | -0.017    | -0.052    | 0.043    | 0.043 | 0.044 | 0.058 |

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| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.85    | 0.60     | 1.10            | 1.10      | 0.021     | -0.043    | 0.062      | 0.067 | 0.043 | 0.052 |
| -0.85    | 0.50     | 1.11            | 1.10      | 0.030     | -0.033    | 0.071      | 0.071 | 0.057 | 0.054 |
| -0.85    | 0.40     | 1.18            | 1.17      | 0.037     | -0.010    | 0.071      | 0.070 | 0.137 | 0.051 |
| -0.85    | 0.30     | 1.23            | 1.23      | 0.065     | -0.006    | 0.032      | 0.032 | 0.084 | 0.030 |
| -0.85    | 0.20     | 1.23            | 1.22      | 0.075     | -0.017    | 0.030      | 0.030 | 0.067 | 0.024 |
| -0.85    | 0.10     | 1.23            | 1.23      | 0.071     | -0.016    | 0.029      | 0.029 | 0.038 | 0.024 |
| -0.85    | 0.00     | 1.24            | 1.23      | 0.060     | -0.013    | 0.030      | 0.030 | 0.046 | 0.030 |
| -0.85    | -0.10    | 1.22            | 1.22      | 0.060     | -0.003    | 0.024      | 0.024 | 0.044 | 0.022 |
| -0.85    | -0.20    | 1.24            | 1.24      | 0.064     | -0.006    | 0.029      | 0.029 | 0.032 | 0.027 |
| -0.85    | -0.30    | 1.24            | 1.24      | 0.076     | -0.016    | 0.032      | 0.032 | 0.044 | 0.030 |
| -0.85    | -0.40    | 1.21            | 1.21      | 0.052     | -0.035    | 0.043      | 0.043 | 0.064 | 0.035 |
| -0.85    | -0.50    | 1.15            | 1.15      | 0.059     | -0.037    | 0.078      | 0.079 | 0.065 | 0.043 |
| -0.85    | -0.60    | 1.15            | 1.14      | 0.000     | -0.021    | 0.059      | 0.059 | 0.059 | 0.040 |
| -0.85    | -0.70    | 1.17            | 1.17      | -0.022    | 0.010     | 0.046      | 0.046 | 0.059 | 0.038 |
| -0.85    | -0.80    | 1.18            | 1.18      | -0.043    | 0.027     | 0.037      | 0.037 | 0.044 | 0.032 |
| -0.90    | 0.80     | 1.08            | 1.05      | -0.071    | -0.244    | 0.103      | 0.104 | 0.091 | 0.083 |
| -0.90    | 0.70     | 1.06            | 1.03      | 0.005     | -0.226    | 0.081      | 0.084 | 0.064 | 0.076 |
| -0.90    | 0.60     | 0.98            | 0.76      | 0.015     | -0.202    | 0.088      | 0.093 | 0.059 | 0.083 |
| -0.90    | 0.50     | 0.94            | 0.92      | 0.032     | -0.160    | 0.079      | 0.084 | 0.059 | 0.079 |
| -0.90    | 0.40     | 0.82            | 0.81      | 0.052     | -0.123    | 0.098      | 0.098 | 0.066 | 0.067 |
| -0.90    | 0.30     | 0.95            | 0.94      | 0.051     | -0.106    | 0.142      | 0.145 | 0.061 | 0.066 |
| -0.90    | 0.20     | 1.03            | 1.02      | 0.044     | -0.057    | 0.152      | 0.153 | 0.049 | 0.061 |
| -0.90    | 0.10     | 1.09            | 1.07      | 0.046     | -0.046    | 0.118      | 0.120 | 0.054 | 0.052 |
| -0.90    | 0.00     | 1.13            | 1.13      | 0.044     | -0.035    | 0.104      | 0.104 | 0.056 | 0.059 |
| -0.90    | -0.10    | 1.12            | 1.11      | 0.035     | -0.010    | 0.140      | 0.140 | 0.047 | 0.056 |
| -0.90    | -0.20    | 1.04            | 1.03      | 0.046     | 0.024     | 0.128      | 0.128 | 0.057 | 0.054 |
| -0.90    | -0.30    | 0.97            | 0.96      | 0.034     | 0.061     | 0.126      | 0.130 | 0.056 | 0.076 |
| -0.90    | -0.40    | 0.83            | 0.82      | 0.052     | 0.094     | 0.125      | 0.130 | 0.071 | 0.083 |
| -0.90    | -0.50    | 0.86            | 0.85      | 0.037     | 0.093     | 0.083      | 0.081 | 0.067 | 0.079 |
| -0.90    | -0.60    | 0.92            | 0.91      | -0.002    | 0.099     | 0.083      | 0.083 | 0.062 | 0.064 |
| -0.90    | -0.70    | 1.00            | 0.98      | -0.029    | 0.116     | 0.086      | 0.088 | 0.071 | 0.066 |
| -0.90    | -0.80    | 1.08            | 1.07      | -0.030    | 0.108     | 0.083      | 0.084 | 0.059 | 0.052 |
| -0.93    | 0.80     | 0.65            | 0.58      | -0.045    | -0.167    | 0.463      | 0.476 | 0.087 | 0.187 |
| -0.93    | 0.70     | 1.00            | 0.94      | -0.002    | -0.336    | 0.137      | 0.147 | 0.073 | 0.097 |
| -0.93    | 0.60     | 0.95            | 0.89      | 0.015     | -0.291    | 0.145      | 0.159 | 0.060 | 0.090 |
| -0.93    | 0.50     | 0.97            | 0.88      | 0.078     | -0.242    | 0.110      | 0.115 | 0.067 | 0.078 |
| -0.93    | 0.40     | 0.80            | 0.77      | 0.050     | -0.195    | 0.104      | 0.107 | 0.070 | 0.104 |
| -0.93    | 0.30     | 0.79            | 0.77      | 0.020     | -0.139    | 0.122      | 0.125 | 0.058 | 0.078 |
| -0.93    | 0.20     | 0.85            | 0.83      | 0.023     | -0.115    | 0.144      | 0.142 | 0.062 | 0.094 |
| -0.93    | 0.10     | 0.82            | 0.82      | 0.028     | -0.065    | 0.184      | 0.185 | 0.055 | 0.073 |
| -0.93    | 0.00     | 0.80            | 0.79      | 0.022     | -0.020    | 0.237      | 0.239 | 0.053 | 0.051 |
| -0.93    | -0.10    | 0.83            | 0.82      | 0.018     | 0.010     | 0.202      | 0.204 | 0.065 | 0.058 |
| -0.93    | -0.20    | 0.86            | 0.86      | 0.022     | 0.050     | 0.142      | 0.142 | 0.062 | 0.062 |
| -0.93    | -0.30    | 0.75            | 0.75      | 0.025     | 0.073     | 0.165      | 0.189 | 0.259 | 0.075 |
| -0.93    | -0.40    | 0.77            | 0.71      | 0.013     | 0.124     | 0.127      | 0.134 | 0.063 | 0.075 |
| -0.93    | -0.50    | 0.87            | 0.80      | 0.077     | 0.165     | 0.147      | 0.160 | 0.077 | 0.087 |
| -0.93    | -0.60    | 0.92            | 0.90      | 0.007     | 0.164     | 0.089      | 0.092 | 0.065 | 0.070 |
| -0.93    | -0.70    | 0.95            | 0.93      | -0.032    | 0.135     | 0.124      | 0.132 | 0.062 | 0.097 |
| -0.93    | -0.80    | 1.01            | 0.99      | -0.022    | 0.142     | 0.107      | 0.114 | 0.065 | 0.082 |
| -0.95    | 0.80     | 0.97            | 0.87      | -0.045    | -0.785    | 0.120      | 0.130 | 0.005 | 0.136 |
| -0.95    | 0.70     | 0.96            | 0.86      | -0.007    | -0.412    | 0.094      | 0.105 | 0.072 | 0.094 |
| -0.95    | 0.60     | 0.91            | 0.82      | 0.003     | -0.378    | 0.134      | 0.142 | 0.065 | 0.102 |
| -0.95    | 0.50     | 0.83            | 0.75      | 0.020     | -0.338    | 0.124      | 0.122 | 0.057 | 0.090 |
| -0.95    | 0.40     | 0.69            | 0.64      | 0.027     | -0.236    | 0.120      | 0.114 | 0.062 | 0.097 |
| -0.95    | 0.30     | 0.70            | 0.68      | 0.003     | -0.115    | 0.107      | 0.105 | 0.064 | 0.109 |
| -0.95    | 0.20     | 0.73            | 0.71      | 0.005     | -0.139    | 0.117      | 0.119 | 0.070 | 0.082 |
| -0.95    | 0.10     | 0.68            | 0.67      | 0.000     | -0.084    | 0.104      | 0.186 | 0.069 | 0.104 |
| -0.95    | 0.00     | 0.61            | 0.60      | -0.003    | -0.027    | 0.264      | 0.274 | 0.070 | 0.074 |
| -0.95    | -0.10    | 0.62            | 0.61      | 0.002     | 0.027     | 0.219      | 0.222 | 0.069 | 0.072 |
| -0.95    | -0.20    | 0.72            | 0.72      | 0.020     | 0.005     | 0.144      | 0.147 | 0.072 | 0.017 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.95 | -0.70 | 0.73            | 0.72      | 0.008     | 0.087     | 0.117      | 0.120 | 0.059 | 0.070 |
| -0.95 | -0.40 | 0.66            | 0.64      | 0.020     | 0.139     | 0.115      | 0.119 | 0.067 | 0.074 |
| -0.95 | -0.50 | 0.81            | 0.81      | 0.019     | 0.025     | 0.191      | 0.144 | 0.328 | 0.067 |
| -0.95 | -0.60 | 0.86            | 0.85      | 0.018     | 0.132     | 0.515      | 0.428 | 0.470 | 0.114 |
| -0.95 | -0.70 | 0.95            | 0.93      | -0.015    | 0.084     | 0.094      | 0.094 | 0.064 | 0.114 |
| -0.95 | -0.80 | 0.97            | 0.93      | -0.037    | 0.194     | 0.171      | 0.217 | 0.074 | 0.072 |
| -0.96 | 0.80  | 0.70            | 0.79      | -0.045    | -0.411    | 0.118      | 0.134 | 0.088 | 0.092 |
| -0.96 | 0.70  | 0.89            | 0.77      | -0.005    | -0.421    | 0.140      | 0.155 | 0.070 | 0.108 |
| -0.96 | 0.60  | 0.81            | 0.71      | 0.000     | -0.354    | 0.167      | 0.172 | 0.062 | 0.115 |
| -0.96 | 0.50  | 0.72            | 0.65      | 0.017     | -0.280    | 0.160      | 0.164 | 0.067 | 0.117 |
| -0.96 | 0.40  | 0.61            | 0.57      | 0.020     | -0.179    | 0.118      | 0.118 | 0.070 | 0.088 |
| -0.96 | 0.30  | 0.62            | 0.59      | -0.005    | -0.142    | 0.088      | 0.083 | 0.052 | 0.067 |
| -0.96 | 0.20  | 0.61            | 0.59      | -0.007    | -0.117    | 0.123      | 0.128 | 0.062 | 0.075 |
| -0.96 | 0.10  | 0.50            | 0.49      | 0.002     | -0.082    | 0.164      | 0.170 | 0.058 | 0.070 |
| -0.96 | 0.00  | 0.34            | 0.31      | -0.013    | -0.010    | 0.190      | 0.212 | 0.075 | 0.075 |
| -0.96 | -0.10 | 0.44            | 0.42      | -0.002    | 0.027     | 0.210      | 0.219 | 0.067 | 0.075 |
| -0.96 | -0.20 | 0.59            | 0.58      | 0.000     | 0.058     | 0.123      | 0.130 | 0.058 | 0.078 |
| -0.96 | -0.30 | 0.63            | 0.61      | 0.000     | 0.117     | 0.112      | 0.115 | 0.055 | 0.073 |
| -0.96 | -0.40 | 0.58            | 0.56      | 0.007     | 0.123     | 0.105      | 0.110 | 0.068 | 0.070 |
| -0.96 | -0.50 | 0.71            | 0.67      | 0.027     | 0.210     | 0.142      | 0.144 | 0.058 | 0.093 |
| -0.96 | -0.60 | 0.86            | 0.81      | 0.002     | 0.254     | 0.144      | 0.157 | 0.058 | 0.087 |
| -0.96 | -0.70 | 0.87            | 0.81      | -0.012    | 0.280     | 0.150      | 0.175 | 0.068 | 0.085 |
| -0.96 | -0.80 | 0.90            | 0.85      | -0.025    | 0.250     | 0.132      | 0.139 | 0.062 | 0.073 |

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OF POOR QUALITY

Table C-5, Station 10,  $\theta = 90^\circ$

| $y$   | $z$   | $\bar{U}$ rms | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'$ rms | $u'$  | $v'$  | $w'$  |
|-------|-------|---------------|-----------|-----------|-----------|----------|-------|-------|-------|
| 0.00  | 0.00  | 1.00          | 0.99      | 0.065     | -0.020    | 0.063    | 0.058 | 0.122 | 0.048 |
| 0.70  | 0.00  | 1.03          | 1.02      | 0.058     | -0.005    | 0.055    | 0.053 | 0.082 | 0.042 |
| 0.60  | 0.00  | 1.05          | 1.04      | 0.072     | 0.000     | 0.050    | 0.049 | 0.063 | 0.033 |
| 0.50  | 0.00  | 1.05          | 1.05      | 0.080     | 0.000     | 0.042    | 0.040 | 0.060 | 0.030 |
| 0.40  | 0.00  | 1.06          | 1.06      | 0.090     | 0.007     | 0.035    | 0.035 | 0.037 | 0.023 |
| 0.30  | 0.00  | 1.08          | 1.07      | 0.100     | 0.007     | 0.040    | 0.040 | 0.028 | 0.025 |
| 0.20  | 0.00  | 1.09          | 1.08      | 0.112     | 0.010     | 0.038    | 0.038 | 0.032 | 0.027 |
| 0.10  | 0.00  | 1.10          | 1.09      | 0.122     | 0.008     | 0.037    | 0.038 | 0.030 | 0.018 |
| 0.00  | 0.00  | 1.11          | 1.10      | 0.133     | 0.008     | 0.038    | 0.037 | 0.038 | 0.023 |
| -0.10 | 0.00  | 1.13          | 1.12      | 0.153     | 0.010     | 0.040    | 0.040 | 0.038 | 0.023 |
| -0.20 | 0.00  | 1.14          | 1.13      | 0.167     | 0.008     | 0.040    | 0.040 | 0.032 | 0.027 |
| -0.30 | 0.00  | 1.15          | 1.13      | 0.188     | 0.010     | 0.040    | 0.040 | 0.035 | 0.025 |
| -0.40 | 0.00  | 1.16          | 1.15      | 0.205     | 0.013     | 0.040    | 0.040 | 0.033 | 0.023 |
| -0.50 | 0.00  | 1.18          | 1.15      | 0.235     | 0.013     | 0.043    | 0.043 | 0.042 | 0.030 |
| -0.55 | 0.00  | 1.16          | 1.13      | 0.238     | 0.020     | 0.070    | 0.072 | 0.050 | 0.053 |
| -0.60 | 0.00  | 1.05          | 1.02      | 0.223     | 0.017     | 0.140    | 0.143 | 0.063 | 0.082 |
| -0.65 | 0.00  | 0.86          | 0.83      | 0.197     | -0.005    | 0.138    | 0.142 | 0.078 | 0.090 |
| -0.70 | 0.00  | 0.73          | 0.70      | 0.158     | -0.013    | 0.113    | 0.115 | 0.072 | 0.092 |
| -0.75 | 0.00  | 0.66          | 0.64      | 0.130     | -0.053    | 0.093    | 0.093 | 0.060 | 0.087 |
| -0.80 | 0.00  | 0.64          | 0.62      | 0.090     | -0.077    | 0.093    | 0.092 | 0.058 | 0.092 |
| -0.80 | -0.10 | 0.60          | 0.59      | 0.077     | 0.027     | 0.093    | 0.093 | 0.055 | 0.077 |
| -0.75 | -0.10 | 0.65          | 0.63      | 0.118     | 0.018     | 0.100    | 0.102 | 0.062 | 0.085 |
| -0.70 | -0.10 | 0.75          | 0.73      | 0.153     | 0.000     | 0.123    | 0.125 | 0.070 | 0.083 |
| -0.65 | -0.10 | 0.86          | 0.83      | 0.183     | -0.018    | 0.132    | 0.137 | 0.073 | 0.092 |
| -0.60 | -0.10 | 1.05          | 1.02      | 0.220     | -0.020    | 0.132    | 0.137 | 0.073 | 0.075 |
| -0.55 | -0.10 | 1.15          | 1.12      | 0.230     | -0.017    | 0.067    | 0.070 | 0.057 | 0.061 |
| -0.50 | -0.10 | 1.17          | 1.15      | 0.230     | -0.008    | 0.047    | 0.047 | 0.038 | 0.023 |
| -0.40 | -0.10 | 1.16          | 1.14      | 0.203     | -0.003    | 0.040    | 0.040 | 0.035 | 0.022 |
| -0.30 | -0.10 | 1.15          | 1.13      | 0.180     | -0.005    | 0.037    | 0.038 | 0.035 | 0.020 |
| -0.20 | -0.10 | 1.13          | 1.12      | 0.162     | 0.000     | 0.040    | 0.040 | 0.033 | 0.020 |
| -0.10 | -0.10 | 1.12          | 1.11      | 0.145     | -0.002    | 0.038    | 0.038 | 0.030 | 0.022 |
| 0.00  | -0.10 | 1.11          | 1.10      | 0.137     | 0.000     | 0.038    | 0.038 | 0.033 | 0.020 |
| 0.10  | -0.10 | 1.11          | 1.10      | 0.122     | 0.002     | 0.040    | 0.040 | 0.030 | 0.023 |
| 0.20  | -0.10 | 1.08          | 1.07      | 0.112     | -0.002    | 0.042    | 0.042 | 0.032 | 0.027 |
| 0.30  | -0.10 | 1.07          | 1.06      | 0.102     | -0.005    | 0.042    | 0.042 | 0.035 | 0.025 |
| 0.40  | -0.10 | 1.07          | 1.07      | 0.090     | 0.000     | 0.042    | 0.043 | 0.035 | 0.025 |
| 0.50  | -0.10 | 1.05          | 1.05      | 0.077     | -0.002    | 0.042    | 0.042 | 0.035 | 0.025 |
| 0.60  | -0.10 | 1.03          | 1.03      | 0.062     | -0.007    | 0.047    | 0.047 | 0.043 | 0.038 |
| 0.70  | -0.10 | 1.01          | 1.01      | 0.055     | -0.012    | 0.053    | 0.053 | 0.057 | 0.045 |
| 0.80  | -0.10 | 0.98          | 0.97      | 0.053     | -0.013    | 0.062    | 0.065 | 0.102 | 0.052 |
| 0.80  | -0.20 | 1.00          | 0.99      | 0.055     | -0.015    | 0.070    | 0.068 | 0.105 | 0.057 |
| 0.70  | -0.20 | 1.01          | 1.00      | 0.057     | -0.012    | 0.053    | 0.053 | 0.092 | 0.040 |
| 0.60  | -0.20 | 1.04          | 1.04      | 0.075     | -0.013    | 0.048    | 0.048 | 0.050 | 0.037 |
| 0.50  | -0.20 | 1.05          | 1.05      | 0.077     | -0.007    | 0.043    | 0.043 | 0.043 | 0.030 |
| 0.40  | -0.20 | 1.06          | 1.05      | 0.088     | -0.005    | 0.040    | 0.040 | 0.035 | 0.023 |
| 0.30  | -0.20 | 1.08          | 1.07      | 0.102     | -0.018    | 0.042    | 0.042 | 0.033 | 0.028 |
| 0.20  | -0.20 | 1.10          | 1.09      | 0.117     | -0.017    | 0.042    | 0.042 | 0.043 | 0.030 |
| 0.10  | -0.20 | 1.11          | 1.10      | 0.127     | -0.015    | 0.038    | 0.038 | 0.045 | 0.027 |
| 0.00  | -0.20 | 1.12          | 1.11      | 0.133     | -0.013    | 0.038    | 0.038 | 0.050 | 0.030 |
| -0.10 | -0.20 | 1.12          | 1.11      | 0.143     | -0.015    | 0.040    | 0.040 | 0.045 | 0.027 |
| -0.20 | -0.20 | 1.15          | 1.13      | 0.160     | -0.018    | 0.042    | 0.042 | 0.043 | 0.025 |
| -0.30 | -0.20 | 1.15          | 1.14      | 0.177     | -0.025    | 0.042    | 0.042 | 0.039 | 0.023 |
| -0.40 | -0.20 | 1.17          | 1.15      | 0.195     | -0.037    | 0.043    | 0.045 | 0.033 | 0.025 |
| -0.50 | -0.20 | 1.18          | 1.16      | 0.213     | -0.050    | 0.048    | 0.047 | 0.048 | 0.027 |
| -0.55 | -0.20 | 1.17          | 1.15      | 0.223     | -0.058    | 0.062    | 0.063 | 0.048 | 0.038 |
| -0.60 | -0.20 | 1.04          | 1.02      | 0.210     | -0.048    | 0.132    | 0.135 | 0.068 | 0.063 |
| -0.65 | -0.20 | 0.88          | 0.85      | 0.190     | -0.043    | 0.127    | 0.130 | 0.072 | 0.080 |
| -0.70 | -0.20 | 0.78          | 0.75      | 0.173     | -0.003    | 0.098    | 0.100 | 0.072 | 0.073 |
| -0.75 | -0.20 | 0.72          | 0.69      | 0.153     | 0.038     | 0.092    | 0.092 | 0.063 | 0.077 |
| -0.80 | -0.20 | 0.67          | 0.64      | 0.123     | 0.073     | 0.098    | 0.100 | 0.068 | 0.078 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80    | -0.30    | 0.84            | 0.82      | 0.173     | 0.083     | 0.083      | 0.082 | 0.070 | 0.068 |
| 0.75     | -0.30    | 0.82            | 0.80      | 0.158     | 0.025     | 0.077      | 0.077 | 0.067 | 0.063 |
| -0.70    | -0.30    | 0.82            | 0.81      | 0.148     | -0.033    | 0.085      | 0.085 | 0.067 | 0.068 |
| -0.65    | -0.30    | 0.91            | 0.89      | 0.158     | -0.075    | 0.115      | 0.117 | 0.073 | 0.068 |
| -0.60    | -0.30    | 1.06            | 1.03      | 0.177     | -0.080    | 0.123      | 0.125 | 0.062 | 0.062 |
| -0.55    | -0.30    | 1.17            | 1.15      | 0.197     | -0.087    | 0.065      | 0.067 | 0.053 | 0.042 |
| -0.50    | -0.30    | 1.20            | 1.18      | 0.197     | -0.070    | 0.047      | 0.047 | 0.042 | 0.025 |
| -0.40    | -0.30    | 1.18            | 1.16      | 0.179     | -0.050    | 0.039      | 0.039 | 0.037 | 0.023 |
| -0.30    | -0.30    | 1.16            | 1.14      | 0.171     | -0.037    | 0.039      | 0.039 | 0.037 | 0.025 |
| -0.20    | -0.30    | 1.14            | 1.13      | 0.159     | -0.030    | 0.040      | 0.040 | 0.035 | 0.023 |
| -0.10    | -0.30    | 1.14            | 1.13      | 0.144     | -0.028    | 0.039      | 0.037 | 0.037 | 0.025 |
| 0.00     | -0.30    | 1.11            | 1.10      | 0.129     | -0.027    | 0.040      | 0.040 | 0.034 | 0.020 |
| 0.10     | -0.30    | 1.11            | 1.10      | 0.122     | -0.018    | 0.040      | 0.039 | 0.045 | 0.015 |
| 0.20     | -0.30    | 1.07            | 1.08      | 0.112     | -0.015    | 0.044      | 0.044 | 0.042 | 0.020 |
| 0.30     | -0.30    | 1.03            | 1.08      | 0.101     | -0.013    | 0.040      | 0.040 | 0.035 | 0.027 |
| 0.40     | -0.30    | 1.06            | 1.06      | 0.091     | -0.017    | 0.040      | 0.040 | 0.035 | 0.027 |
| 0.50     | -0.30    | 1.06            | 1.05      | 0.075     | -0.018    | 0.042      | 0.042 | 0.039 | 0.032 |
| 0.60     | -0.30    | 1.04            | 1.04      | 0.060     | -0.020    | 0.047      | 0.047 | 0.054 | 0.035 |
| 0.70     | -0.30    | 1.02            | 1.01      | 0.065     | -0.020    | 0.052      | 0.052 | 0.055 | 0.040 |
| 0.80     | -0.30    | 1.00            | 0.99      | 0.057     | -0.017    | 0.062      | 0.059 | 0.179 | 0.055 |
| 0.80     | -0.40    | 0.99            | 0.98      | 0.049     | -0.022    | 0.072      | 0.065 | 0.132 | 0.049 |
| 0.70     | -0.40    | 1.02            | 1.01      | 0.055     | -0.018    | 0.054      | 0.052 | 0.112 | 0.039 |
| 0.60     | -0.40    | 1.04            | 1.04      | 0.064     | -0.022    | 0.044      | 0.044 | 0.054 | 0.039 |
| 0.50     | -0.40    | 1.05            | 1.05      | 0.080     | -0.017    | 0.042      | 0.042 | 0.040 | 0.028 |
| 0.40     | -0.40    | 1.07            | 1.07      | 0.092     | -0.025    | 0.040      | 0.040 | 0.039 | 0.030 |
| 0.30     | -0.40    | 1.08            | 1.07      | 0.104     | -0.020    | 0.040      | 0.040 | 0.037 | 0.025 |
| 0.20     | -0.40    | 1.09            | 1.08      | 0.111     | -0.023    | 0.042      | 0.042 | 0.037 | 0.030 |
| 0.10     | -0.40    | 1.10            | 1.10      | 0.126     | -0.027    | 0.039      | 0.039 | 0.049 | 0.030 |
| 0.00     | -0.40    | 1.12            | 1.11      | 0.129     | -0.028    | 0.040      | 0.040 | 0.037 | 0.028 |
| -0.10    | -0.40    | 1.15            | 1.14      | 0.142     | -0.030    | 0.039      | 0.040 | 0.035 | 0.027 |
| -0.20    | -0.40    | 1.16            | 1.15      | 0.151     | -0.035    | 0.040      | 0.040 | 0.035 | 0.028 |
| -0.30    | -0.40    | 1.16            | 1.15      | 0.161     | -0.042    | 0.042      | 0.042 | 0.037 | 0.025 |
| -0.40    | -0.40    | 1.17            | 1.16      | 0.166     | -0.052    | 0.040      | 0.040 | 0.035 | 0.025 |
| -0.50    | -0.40    | 1.19            | 1.17      | 0.161     | -0.065    | 0.045      | 0.045 | 0.044 | 0.023 |
| -0.55    | -0.40    | 1.19            | 1.17      | 0.158     | -0.085    | 0.050      | 0.050 | 0.050 | 0.035 |
| -0.60    | -0.40    | 1.15            | 1.13      | 0.146     | -0.085    | 0.082      | 0.082 | 0.060 | 0.050 |
| -0.65    | -0.40    | 1.02            | 1.01      | 0.109     | -0.070    | 0.104      | 0.105 | 0.062 | 0.070 |
| -0.70    | -0.40    | 0.97            | 0.91      | 0.104     | -0.058    | 0.050      | 0.050 | 0.062 | 0.075 |
| -0.75    | -0.40    | 0.90            | 0.89      | 0.107     | 0.005     | 0.085      | 0.085 | 0.072 | 0.070 |
| -0.80    | -0.40    | 0.90            | 0.89      | 0.107     | 0.057     | 0.077      | 0.077 | 0.069 | 0.060 |
| -0.80    | -0.50    | 1.01            | 1.00      | 0.082     | 0.075     | 0.080      | 0.080 | 0.067 | 0.062 |
| -0.75    | -0.50    | 1.07            | 1.07      | 0.087     | -0.003    | 0.079      | 0.080 | 0.065 | 0.067 |
| -0.70    | -0.50    | 1.07            | 1.06      | 0.087     | -0.033    | 0.089      | 0.089 | 0.067 | 0.069 |
| -0.65    | -0.50    | 1.17            | 1.12      | 0.105     | -0.064    | 0.075      | 0.075 | 0.052 | 0.057 |
| -0.60    | -0.50    | 1.19            | 1.18      | 0.122     | -0.077    | 0.052      | 0.052 | 0.050 | 0.037 |
| -0.55    | -0.50    | 1.20            | 1.17      | 0.134     | -0.072    | 0.044      | 0.044 | 0.045 | 0.022 |
| -0.50    | -0.50    | 1.18            | 1.17      | 0.137     | -0.064    | 0.042      | 0.042 | 0.037 | 0.023 |
| -0.40    | -0.50    | 1.17            | 1.16      | 0.149     | -0.052    | 0.040      | 0.040 | 0.038 | 0.023 |
| -0.30    | -0.50    | 1.15            | 1.14      | 0.149     | -0.045    | 0.040      | 0.040 | 0.038 | 0.022 |
| -0.20    | -0.50    | 1.14            | 1.13      | 0.144     | -0.042    | 0.042      | 0.042 | 0.035 | 0.022 |
| -0.10    | -0.50    | 1.14            | 1.13      | 0.176     | -0.040    | 0.038      | 0.038 | 0.035 | 0.027 |
| 0.00     | -0.50    | 1.12            | 1.11      | 0.129     | -0.038    | 0.038      | 0.040 | 0.038 | 0.028 |
| 0.10     | -0.50    | 1.11            | 1.10      | 0.119     | -0.028    | 0.038      | 0.038 | 0.038 | 0.022 |
| 0.20     | -0.50    | 1.07            | 1.08      | 0.114     | -0.028    | 0.038      | 0.038 | 0.033 | 0.027 |
| 0.30     | -0.50    | 1.08            | 1.07      | 0.104     | -0.027    | 0.040      | 0.040 | 0.037 | 0.025 |
| 0.40     | -0.50    | 1.07            | 1.06      | 0.089     | -0.023    | 0.042      | 0.042 | 0.037 | 0.027 |
| 0.50     | -0.50    | 1.05            | 1.04      | 0.079     | -0.022    | 0.040      | 0.040 | 0.037 | 0.028 |
| 0.60     | -0.50    | 1.04            | 1.04      | 0.075     | -0.022    | 0.038      | 0.038 | 0.052 | 0.035 |
| 0.70     | -0.50    | 1.03            | 1.02      | 0.067     | -0.020    | 0.047      | 0.047 | 0.105 | 0.040 |
| 0.80     | -0.50    | 1.00            | 0.99      | 0.049     | -0.015    | 0.070      | 0.065 | 0.142 | 0.045 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.80     | -0.60    | 1.00            | 0.98      | 0.060     | -0.030    | 0.069            | 0.062 | 0.157 | 0.045 |
| 0.70     | -0.60    | 1.03            | 1.02      | 0.072     | -0.022    | 0.059            | 0.054 | 0.134 | 0.037 |
| 0.60     | -0.60    | 1.03            | 1.02      | 0.079     | -0.020    | 0.047            | 0.045 | 0.077 | 0.035 |
| 0.50     | -0.60    | 1.04            | 1.04      | 0.075     | -0.020    | 0.044            | 0.044 | 0.040 | 0.033 |
| 0.40     | -0.60    | 1.06            | 1.06      | 0.090     | -0.022    | 0.038            | 0.037 | 0.040 | 0.028 |
| 0.30     | -0.60    | 1.08            | 1.07      | 0.097     | -0.023    | 0.040            | 0.040 | 0.047 | 0.025 |
| 0.20     | -0.60    | 1.08            | 1.07      | 0.110     | -0.030    | 0.040            | 0.040 | 0.042 | 0.028 |
| 0.10     | -0.60    | 1.09            | 1.08      | 0.121     | -0.032    | 0.042            | 0.042 | 0.045 | 0.028 |
| 0.00     | -0.60    | 1.10            | 1.09      | 0.126     | -0.038    | 0.038            | 0.038 | 0.038 | 0.027 |
| -0.10    | -0.60    | 1.13            | 1.12      | 0.143     | -0.042    | 0.040            | 0.040 | 0.042 | 0.023 |
| -0.20    | -0.60    | 1.14            | 1.13      | 0.151     | -0.047    | 0.035            | 0.035 | 0.040 | 0.025 |
| -0.30    | -0.60    | 1.16            | 1.15      | 0.153     | -0.050    | 0.044            | 0.044 | 0.044 | 0.023 |
| -0.40    | -0.60    | 1.18            | 1.17      | 0.146     | -0.055    | 0.052            | 0.050 | 0.040 | 0.025 |
| -0.50    | -0.60    | 1.21            | 1.19      | 0.146     | -0.062    | 0.049            | 0.049 | 0.042 | 0.027 |
| -0.55    | -0.60    | 1.19            | 1.18      | 0.133     | -0.060    | 0.047            | 0.047 | 0.039 | 0.027 |
| -0.60    | -0.60    | 1.24            | 1.23      | 0.126     | -0.069    | 0.065            | 0.065 | 0.040 | 0.035 |
| -0.65    | -0.60    | 1.19            | 1.19      | 0.111     | -0.057    | 0.052            | 0.052 | 0.057 | 0.042 |
| -0.70    | -0.60    | 1.14            | 1.14      | 0.099     | -0.037    | 0.062            | 0.062 | 0.057 | 0.049 |
| -0.75    | -0.60    | 1.12            | 1.11      | 0.091     | -0.003    | 0.067            | 0.067 | 0.064 | 0.052 |
| -0.80    | -0.60    | 1.09            | 1.08      | 0.089     | 0.035     | 0.084            | 0.084 | 0.060 | 0.054 |
| -0.80    | -0.70    | 1.15            | 1.14      | 0.070     | 0.030     | 0.075            | 0.075 | 0.060 | 0.057 |
| -0.75    | -0.70    | 1.15            | 1.15      | 0.075     | -0.005    | 0.054            | 0.054 | 0.055 | 0.044 |
| -0.70    | -0.70    | 1.24            | 1.24      | 0.089     | -0.032    | 0.099            | 0.099 | 0.049 | 0.035 |
| -0.65    | -0.70    | 1.11            | 1.11      | 0.092     | -0.035    | 0.067            | 0.067 | 0.057 | 0.037 |
| -0.60    | -0.70    | 1.19            | 1.18      | 0.107     | -0.047    | 0.087            | 0.087 | 0.055 | 0.040 |
| -0.55    | -0.70    | 1.18            | 1.18      | 0.116     | -0.047    | 0.049            | 0.049 | 0.050 | 0.034 |
| -0.50    | -0.70    | 1.20            | 1.19      | 0.131     | -0.040    | 0.052            | 0.052 | 0.057 | 0.035 |
| -0.40    | -0.70    | 1.17            | 1.16      | 0.134     | -0.045    | 0.049            | 0.050 | 0.057 | 0.035 |
| -0.30    | -0.70    | 1.15            | 1.13      | 0.146     | -0.045    | 0.054            | 0.052 | 0.069 | 0.040 |
| -0.20    | -0.70    | 1.14            | 1.13      | 0.136     | -0.047    | 0.044            | 0.044 | 0.069 | 0.035 |
| -0.10    | -0.70    | 1.10            | 1.09      | 0.129     | -0.050    | 0.039            | 0.039 | 0.064 | 0.035 |
| 0.00     | -0.70    | 1.11            | 1.10      | 0.124     | -0.047    | 0.040            | 0.040 | 0.062 | 0.035 |
| 0.10     | -0.70    | 1.09            | 1.08      | 0.099     | -0.042    | 0.045            | 0.044 | 0.079 | 0.025 |
| 0.20     | -0.70    | 1.08            | 1.07      | 0.092     | -0.034    | 0.049            | 0.049 | 0.077 | 0.027 |
| 0.30     | -0.70    | 1.06            | 1.06      | 0.091     | -0.025    | 0.040            | 0.040 | 0.054 | 0.022 |
| 0.40     | -0.70    | 1.05            | 1.05      | 0.075     | -0.023    | 0.049            | 0.049 | 0.062 | 0.020 |
| 0.50     | -0.70    | 1.04            | 1.04      | 0.074     | -0.020    | 0.045            | 0.042 | 0.079 | 0.025 |
| 0.60     | -0.70    | 1.03            | 1.03      | 0.065     | -0.018    | 0.049            | 0.047 | 0.079 | 0.034 |
| 0.70     | -0.70    | 1.03            | 1.02      | 0.055     | -0.023    | 0.051            | 0.048 | 0.101 | 0.038 |
| 0.80     | -0.70    | 0.99            | 0.98      | 0.058     | -0.025    | 0.058            | 0.058 | 0.106 | 0.050 |
| 0.80     | -0.80    | 0.99            | 0.99      | 0.045     | -0.025    | 0.060            | 0.056 | 0.118 | 0.048 |
| 0.70     | -0.80    | 1.03            | 1.02      | 0.060     | -0.023    | 0.060            | 0.055 | 0.130 | 0.043 |
| 0.60     | -0.80    | 1.04            | 1.04      | 0.065     | -0.023    | 0.047            | 0.045 | 0.071 | 0.042 |
| 0.50     | -0.80    | 1.06            | 1.06      | 0.076     | -0.025    | 0.038            | 0.038 | 0.043 | 0.030 |
| 0.40     | -0.80    | 1.05            | 1.04      | 0.083     | -0.025    | 0.040            | 0.040 | 0.048 | 0.030 |
| 0.30     | -0.80    | 1.06            | 1.06      | 0.081     | -0.028    | 0.040            | 0.040 | 0.040 | 0.035 |
| 0.20     | -0.80    | 1.07            | 1.07      | 0.088     | -0.035    | 0.038            | 0.038 | 0.040 | 0.040 |
| 0.10     | -0.80    | 1.08            | 1.08      | 0.091     | -0.047    | 0.048            | 0.048 | 0.058 | 0.045 |
| 0.00     | -0.80    | 1.10            | 1.10      | 0.098     | -0.051    | 0.055            | 0.055 | 0.053 | 0.047 |
| -0.10    | -0.80    | 1.09            | 1.09      | 0.093     | -0.047    | 0.055            | 0.055 | 0.066 | 0.058 |
| -0.20    | -0.80    | 1.12            | 1.11      | 0.096     | -0.047    | 0.060            | 0.060 | 0.080 | 0.060 |
| -0.30    | -0.80    | 1.13            | 1.12      | 0.080     | -0.048    | 0.070            | 0.070 | 0.083 | 0.065 |
| -0.40    | -0.80    | 1.14            | 1.13      | 0.065     | -0.043    | 0.071            | 0.071 | 0.088 | 0.066 |
| -0.50    | -0.80    | 1.15            | 1.14      | 0.065     | -0.032    | 0.083            | 0.085 | 0.085 | 0.070 |
| -0.55    | -0.80    | 1.15            | 1.14      | 0.066     | -0.032    | 0.081            | 0.083 | 0.093 | 0.066 |
| -0.60    | -0.80    | 1.16            | 1.15      | 0.053     | -0.027    | 0.076            | 0.076 | 0.086 | 0.071 |
| -0.65    | -0.80    | 1.18            | 1.18      | 0.047     | -0.028    | 0.083            | 0.085 | 0.085 | 0.061 |
| -0.70    | -0.80    | 1.16            | 1.15      | 0.033     | -0.017    | 0.086            | 0.086 | 0.088 | 0.065 |
| -0.75    | -0.80    | 1.16            | 1.15      | 0.013     | 0.007     | 0.091            | 0.073 | 0.088 | 0.071 |
| -0.80    | -0.80    | 1.13            | 1.13      | 0.003     | 0.040     | 0.091            | 0.093 | 0.085 | 0.070 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |       |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|-------|
| -0.80 | -0.85 | 1.12            | 1.10      | -0.128    | 0.052     | 0.103      | 0.104 | 0.109 | 0.079 |       |
| -0.75 | -0.85 | 1.12            | 1.11      | -0.108    | 0.020     | 0.101      | 0.104 | 0.109 | 0.074 |       |
| -0.70 | -0.85 | 1.10            | 1.09      | -0.084    | -0.013    | 0.096      | 0.096 | 0.118 | 0.076 |       |
| -0.65 | -0.85 | 1.10            | 1.09      | -0.086    | -0.025    | 0.098      | 0.099 | 0.118 | 0.074 |       |
| -0.60 | -0.85 | 1.10            | 1.09      | -0.076    | -0.029    | 0.108      | 0.108 | 0.119 | 0.071 |       |
| -0.55 | -0.85 | 1.11            | 1.09      | -0.067    | -0.037    | 0.093      | 0.093 | 0.116 | 0.076 |       |
| -0.50 | -0.85 | 1.09            | 1.09      | -0.047    | -0.032    | 0.101      | 0.101 | 0.101 | 0.074 |       |
| -0.40 | -0.85 | 1.09            | 1.08      | -0.040    | -0.045    | 0.091      | 0.093 | 0.106 | 0.076 |       |
| -0.30 | -0.85 | 1.10            | 1.09      | -0.025    | -0.039    | 0.076      | 0.076 | 0.111 | 0.082 |       |
| -0.20 | -0.85 | 1.07            | 1.07      | -0.010    | -0.056    | 0.076      | 0.076 | 0.089 | 0.071 |       |
| -0.10 | -0.85 | 1.08            | 1.07      | 0.010     | -0.044    | 0.072      | 0.072 | 0.087 | 0.061 |       |
| 0.00  | -0.85 | 1.09            | 1.08      | 0.032     | -0.034    | 0.066      | 0.066 | 0.077 | 0.057 |       |
| 0.10  | -0.85 | 1.07            | 1.07      | 0.050     | -0.032    | 0.054      | 0.054 | 0.067 | 0.047 |       |
| 0.20  | -0.85 | 1.07            | 1.06      | 0.059     | -0.017    | 0.054      | 0.054 | 0.056 | 0.037 |       |
| 0.30  | -0.85 | 1.05            | 1.05      | 0.066     | -0.015    | 0.050      | 0.050 | 0.050 | 0.039 |       |
| 0.40  | -0.85 | 1.05            | 1.04      | 0.066     | -0.012    | 0.045      | 0.045 | 0.044 | 0.032 |       |
| 0.50  | -0.85 | 1.04            | 1.03      | 0.059     | -0.013    | 0.044      | 0.044 | 0.049 | 0.034 |       |
| 0.60  | -0.85 | 1.03            | 1.03      | 0.072     | -0.019    | 0.052      | 0.052 | 0.061 | 0.032 |       |
| 0.70  | -0.85 | 1.02            | 1.01      | 0.061     | -0.027    | 0.050      | 0.050 | 0.066 | 0.045 |       |
| 0.80  | -0.85 | 0.96            | 0.95      | 0.039     | -0.034    | 0.062      | 0.062 | 0.069 | 0.052 |       |
| -0.80 | -0.90 | 1.10            | 1.07      | -0.221    | 0.077     | 0.093      | 0.090 | 0.113 | 0.075 |       |
| -0.75 | -0.90 | 1.08            | 1.05      | -0.223    | 0.008     | 0.091      | 0.091 | 0.113 | 0.075 |       |
| -0.70 | -0.90 | 1.07            | 1.05      | -0.146    | -0.010    | 0.100      | 0.098 | 0.135 | 0.088 |       |
| -0.65 | -0.90 | 1.08            | 1.05      | -0.189    | -0.017    | 0.105      | 0.106 | 0.108 | 0.078 |       |
| -0.60 | -0.90 | 1.08            | 1.05      | -0.191    | -0.025    | 0.098      | 0.100 | 0.101 | 0.070 |       |
| -0.55 | -0.90 | 1.08            | 1.05      | -0.176    | -0.028    | 0.106      | 0.110 | 0.111 | 0.078 |       |
| -0.50 | -0.90 | 1.08            | 1.06      | -0.159    | -0.025    | 0.105      | 0.105 | 0.096 | 0.075 |       |
| -0.40 | -0.90 | 1.08            | 1.06      | -0.143    | -0.037    | 0.098      | 0.096 | 0.101 | 0.076 |       |
| -0.30 | -0.90 | 1.08            | 1.07      | -0.120    | -0.037    | 0.086      | 0.086 | 0.091 | 0.068 |       |
| -0.20 | -0.90 | 1.08            | 1.07      | -0.106    | -0.033    | 0.090      | 0.090 | 0.101 | 0.065 |       |
| -0.10 | -0.90 | 1.07            | 1.07      | -0.073    | -0.042    | 0.070      | 0.070 | 0.085 | 0.061 |       |
| 0.00  | -0.70 | 1.08            | 1.08      | -0.045    | -0.030    | 0.068      | 0.068 | 0.086 | 0.058 |       |
| 0.10  | -0.90 | 1.08            | 1.07      | -0.018    | -0.032    | 0.061      | 0.061 | 0.075 | 0.051 |       |
| 0.20  | -0.90 | 1.06            | 1.05      | 0.007     | -0.023    | 0.055      | 0.056 | 0.073 | 0.042 |       |
| 0.30  | -0.70 | 1.07            | 1.03      | 0.010     | -0.010    | 0.056      | 0.056 | 0.063 | 0.042 |       |
| 0.40  | -0.90 | 1.03            | 1.03      | 0.025     | -0.017    | 0.050      | 0.050 | 0.065 | 0.037 |       |
| 0.50  | -0.70 | 1.02            | 1.02      | 0.018     | -0.012    | 0.053      | 0.053 | 0.070 | 0.038 |       |
| 0.60  | -0.70 | 1.01            | 1.01      | 0.058     | -0.015    | 0.051      | 0.051 | 0.063 | 0.035 |       |
| 0.70  | -0.70 | 0.79            | 0.79      | 0.056     | -0.018    | 0.061      | 0.061 | 0.063 | 0.038 |       |
| 0.80  | -0.90 | 0.95            | 0.95      | 0.047     | -0.020    | 0.065      | 0.067 | 0.086 | 0.045 |       |
| 0.30  | -0.75 | 1.04            | 1.00      | -0.256    | 0.038     | 0.097      | 0.106 | 0.102 | 0.074 |       |
| -0.75 | -0.93 | 1.05            | 1.00      | -0.269    | 0.016     | 0.097      | 0.097 | 0.114 | 0.073 |       |
| -0.70 | -0.93 | 1.05            | 1.01      | -0.264    | -0.008    | 0.101      | 0.101 | 0.106 | 0.081 |       |
| -0.65 | -0.93 | 1.06            | 1.02      | -0.267    | -0.013    | 0.096      | 0.094 | 0.106 | 0.076 |       |
| -0.60 | -0.93 | 1.06            | 1.02      | -0.249    | -0.023    | 0.099      | 0.099 | 0.102 | 0.072 |       |
| -0.55 | -0.93 | 1.06            | 1.03      | -0.236    | -0.028    | 0.086      | 0.087 | 0.106 | 0.076 |       |
| -0.50 | -0.93 | 1.05            | 1.02      | -0.229    | -0.025    | 0.091      | 0.091 | 0.109 | 0.073 |       |
| -0.40 | -0.93 | 1.06            | 1.04      | -0.214    | -0.026    | 0.084      | 0.087 | 0.092 | 0.066 |       |
| -0.30 | -0.93 | 1.07            | 1.04      | -0.180    | -0.033    | 0.092      | 0.071 | 0.086 | 0.071 |       |
| -0.20 | -0.93 | 1.07            | 1.05      | -0.14     | -0.033    | 0.086      | 0.087 | 0.091 | 0.065 |       |
| -0.10 | -0.73 | 1.05            | 1.04      | -0.117    | -0.035    | 0.076      | 0.074 | 0.081 | 0.066 |       |
| 0.00  | -0.93 | 1.04            | 1.03      | -0.079    | -0.033    | 0.077      | 0.077 | 0.076 | 0.056 |       |
| 0.10  | -0.73 | 1.04            | 1.03      | -0.054    | -0.020    | 0.077      | 0.077 | 0.079 | 0.049 |       |
| 0.20  | -0.73 | 1.04            | 1.03      | -0.038    | -0.021    | 0.068      | 0.069 | 0.073 | 0.049 |       |
| 0.30  | -0.73 | 1.01            | 1.00      | -0.016    | -0.013    | 0.073      | 0.073 | 0.079 | 0.056 |       |
| 0.40  | -0.93 | 1.00            | 1.00      | -0.003    | -0.015    | 0.068      | 0.069 | 0.069 | 0.043 |       |
| 0.50  | -0.93 | 0.97            | 0.97      | 0.07      | -0.010    | -0.015     | 0.064 | 0.064 | 0.071 | 0.048 |
| 0.50  | -0.93 | 0.99            | 0.98      | 0.068     | -0.015    | 0.066      | 0.066 | 0.087 | 0.038 |       |
| 0.60  | -0.93 | 1.00            | 0.99      | 0.073     | -0.023    | 0.063      | 0.063 | 0.059 | 0.041 |       |
| 0.65  | -0.93 | 0.99            | 0.98      | 0.061     | -0.020    | 0.066      | 0.066 | 0.102 | 0.043 |       |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.70     | -0.93    | 0.77            | 0.97      | 0.043     | -0.016    | 0.058            | 0.058 | 0.076 | 0.041 |
| 0.80     | -0.93    | 0.96            | 0.95      | 0.026     | -0.021    | 0.066            | 0.066 | 0.101 | 0.041 |
| 0.80     | -0.95    | 1.04            | 0.98      | -0.312    | 0.025     | 0.079            | 0.104 | 0.097 | 0.067 |
| -0.75    | -0.95    | 1.05            | 0.98      | -0.332    | 0.008     | 0.104            | 0.101 | 0.106 | 0.068 |
| -0.70    | -0.95    | 1.03            | 0.98      | -0.326    | -0.005    | 0.094            | 0.091 | 0.094 | 0.059 |
| -0.65    | -0.95    | 1.04            | 0.98      | -0.311    | -0.020    | 0.097            | 0.097 | 0.101 | 0.069 |
| -0.60    | -0.95    | 1.03            | 0.97      | -0.307    | -0.017    | 0.091            | 0.093 | 0.101 | 0.064 |
| -0.55    | -0.95    | 1.03            | 0.97      | -0.311    | -0.015    | 0.094            | 0.089 | 0.101 | 0.061 |
| -0.50    | -0.95    | 1.05            | 1.01      | -0.278    | -0.021    | 0.081            | 0.081 | 0.094 | 0.064 |
| -0.40    | -0.95    | 1.07            | 0.99      | -0.259    | -0.018    | 0.071            | 0.076 | 0.099 | 0.066 |
| -0.30    | -0.75    | 1.05            | 1.01      | -0.235    | -0.028    | 0.084            | 0.084 | 0.088 | 0.064 |
| -0.20    | -0.95    | 1.04            | 1.02      | -0.205    | -0.028    | 0.083            | 0.083 | 0.083 | 0.056 |
| -0.10    | -0.95    | 1.04            | 1.02      | -0.174    | -0.026    | 0.089            | 0.089 | 0.088 | 0.052 |
| 0.00     | -0.95    | 1.03            | 1.02      | -0.142    | -0.023    | 0.088            | 0.089 | 0.086 | 0.061 |
| 0.10     | -0.95    | 1.01            | 1.00      | -0.109    | -0.030    | 0.089            | 0.089 | 0.089 | 0.053 |
| 0.20     | -0.95    | 0.98            | 0.97      | -0.089    | -0.017    | 0.083            | 0.084 | 0.081 | 0.055 |
| 0.30     | -0.95    | 0.97            | 0.96      | -0.058    | -0.017    | 0.088            | 0.088 | 0.083 | 0.048 |
| 0.40     | -0.95    | 0.97            | 0.97      | -0.059    | -0.020    | 0.079            | 0.081 | 0.074 | 0.048 |
| 0.50     | -0.95    | 0.96            | 0.96      | -0.046    | -0.023    | 0.074            | 0.074 | 0.078 | 0.046 |
| 0.60     | -0.95    | 0.95            | 0.94      | -0.041    | -0.020    | 0.064            | 0.081 | 0.112 | 0.046 |
| 0.70     | -0.75    | 0.96            | 0.91      | -0.012    | 0.036     | 0.459            | 0.492 | 0.197 | 0.167 |
| 0.80     | -0.95    | 0.92            | 0.92      | -0.023    | -0.023    | 0.073            | 0.073 | 0.073 | 0.047 |
| 0.70     | -0.76    | 0.99            | 0.97      | -0.379    | 0.015     | 0.102            | 0.105 | 0.109 | 0.067 |
| -0.75    | -0.96    | 1.01            | 0.94      | -0.356    | 0.003     | 0.105            | 0.107 | 0.100 | 0.067 |
| -0.70    | -0.76    | 1.02            | 0.95      | -0.357    | -0.012    | 0.117            | 0.115 | 0.115 | 0.065 |
| -0.65    | -0.96    | 1.03            | 0.96      | -0.349    | -0.012    | 0.115            | 0.119 | 0.120 | 0.067 |
| -0.60    | -0.96    | 1.26            | 0.97      | -0.578    | -0.008    | 1.013            | 1.100 | 1.148 | 0.082 |
| -0.55    | -0.56    | 1.07            | 0.96      | -0.314    | -0.032    | 0.077            | 0.050 | 0.104 | 0.065 |
| -0.50    | -0.76    | 1.05            | 1.01      | -0.251    | 0.003     | 0.130            | 0.099 | 0.160 | 0.080 |
| -0.40    | -0.96    | 1.04            | 1.01      | -0.230    | -0.010    | 0.130            | 0.099 | 0.160 | 0.080 |
| -0.30    | -0.76    | 1.05            | 0.98      | -0.263    | -0.052    | 0.023            | 0.038 | 0.037 | 0.005 |
| -0.20    | -0.96    | 0.91            | 0.87      | -0.244    | -0.022    | 0.094            | 0.065 | 0.119 | 0.080 |
| -0.10    | -0.76    | 1.07            | 1.01      | -0.184    | -0.010    | 0.129            | 0.125 | 0.074 | 0.062 |
| 0.00     | -0.76    | 1.06            | 0.98      | -0.180    | -0.035    | 0.104            | 0.100 | 0.112 | 0.060 |
| 0.10     | -0.76    | 1.01            | 1.00      | -0.110    | -0.023    | 0.109            | 0.110 | 0.094 | 0.055 |
| 0.20     | -0.76    | 0.93            | 0.92      | -0.082    | -0.010    | 0.105            | 0.109 | 0.077 | 0.055 |
| 0.30     | -0.76    | 0.97            | 0.89      | -0.167    | 0.002     | 0.468            | 0.142 | 0.573 | 0.079 |
| 0.40     | -0.76    | 0.95            | 0.95      | -0.064    | -0.022    | 0.089            | 0.089 | 0.084 | 0.045 |
| 0.50     | -0.76    | 1.10            | 0.94      | -0.227    | -0.025    | 0.719            | 0.092 | 0.887 | 0.073 |
| 0.60     | -0.76    | 0.96            | 0.96      | 0.070     | -0.015    | 0.085            | 0.084 | 0.084 | 0.043 |
| 0.70     | -0.76    | 0.96            | 0.96      | 0.070     | -0.015    | 0.085            | 0.084 | 0.084 | 0.043 |
| 0.80     | -0.76    | 0.91            | 0.91      | 0.038     | -0.002    | 0.074            | 0.074 | 0.069 | 0.040 |
| 0.70     | 0.00     | 1.00            | 1.00      | 0.049     | 0.013     | 0.054            | 0.054 | 0.053 | 0.043 |
| 0.60     | 0.00     | 1.03            | 1.03      | 0.051     | 0.018     | 0.058            | 0.058 | 0.051 | 0.038 |
| 0.50     | 0.00     | 1.05            | 1.05      | 0.073     | 0.010     | 0.043            | 0.043 | 0.030 | 0.028 |
| 0.40     | 0.00     | 1.07            | 1.06      | 0.087     | 0.015     | 0.038            | 0.038 | 0.026 | 0.026 |
| 0.30     | 0.00     | 1.07            | 1.07      | 0.096     | 0.013     | 0.036            | 0.036 | 0.030 | 0.018 |
| 0.20     | 0.00     | 1.10            | 1.09      | 0.117     | 0.013     | 0.041            | 0.041 | 0.031 | 0.018 |
| 0.10     | 0.00     | 1.11            | 1.10      | 0.124     | 0.013     | 0.041            | 0.041 | 0.028 | 0.018 |
| 0.00     | 0.00     | 1.11            | 1.10      | 0.132     | 0.013     | 0.040            | 0.041 | 0.028 | 0.021 |
| -0.10    | 0.00     | 1.11            | 1.10      | 0.150     | 0.015     | 0.040            | 0.040 | 0.026 | 0.018 |
| 0.20     | 0.00     | 1.13            | 1.12      | 0.167     | 0.018     | 0.043            | 0.043 | 0.028 | 0.018 |
| -0.30    | 0.00     | 1.14            | 1.13      | 0.183     | 0.023     | 0.038            | 0.038 | 0.028 | 0.018 |
| -0.40    | 0.00     | 1.16            | 1.14      | 0.209     | 0.026     | 0.040            | 0.040 | 0.031 | 0.016 |
| -0.50    | 0.00     | 1.16            | 1.14      | 0.239     | 0.033     | 0.041            | 0.041 | 0.045 | 0.020 |
| -0.55    | 0.00     | 1.17            | 1.15      | 0.236     | 0.036     | 0.045            | 0.045 | 0.061 | 0.025 |
| -0.60    | 0.00     | 1.15            | 1.12      | 0.198     | 0.035     | 0.077            | 0.079 | 0.082 | 0.053 |
| -0.65    | 0.00     | 1.00            | 0.98      | 0.175     | 0.026     | 0.153            | 0.158 | 0.073 | 0.082 |
| -0.70    | 0.00     | 0.82            | 0.80      | 0.147     | 0.012     | 0.153            | 0.157 | 0.066 | 0.094 |
| -0.75    | 0.00     | 0.69            | 0.67      | 0.099     | -0.007    | 0.115            | 0.117 | 0.059 | 0.092 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.80    | 0.00     | 0.64            | 0.62      | 0.051     | -0.053    | 0.072            | 0.092 | 0.054 | 0.087 |
| -0.80    | 0.10     | 0.74            | 0.73      | 0.104     | -0.051    | 0.097            | 0.099 | 0.071 | 0.094 |
| -0.75    | 0.10     | 0.78            | 0.76      | 0.140     | 0.012     | 0.110            | 0.110 | 0.066 | 0.071 |
| -0.70    | 0.10     | 0.84            | 0.82      | 0.175     | 0.059     | 0.132            | 0.174 | 0.074 | 0.087 |
| -0.65    | 0.10     | 1.02            | 0.99      | 0.190     | 0.071     | 0.143            | 0.147 | 0.079 | 0.077 |
| -0.60    | 0.10     | 1.17            | 1.14      | 0.209     | 0.079     | 0.066            | 0.064 | 0.082 | 0.040 |
| -0.55    | 0.10     | 1.19            | 1.16      | 0.239     | 0.073     | 0.049            | 0.048 | 0.063 | 0.025 |
| -0.50    | 0.10     | 1.18            | 1.15      | 0.232     | 0.063     | 0.043            | 0.043 | 0.043 | 0.018 |
| -0.40    | 0.10     | 1.15            | 1.13      | 0.204     | 0.048     | 0.040            | 0.040 | 0.031 | 0.020 |
| -0.30    | 0.10     | 1.15            | 1.14      | 0.181     | 0.033     | 0.036            | 0.038 | 0.031 | 0.018 |
| -0.20    | 0.10     | 1.13            | 1.11      | 0.163     | 0.031     | 0.040            | 0.040 | 0.030 | 0.020 |
| -0.10    | 0.10     | 1.10            | 1.07      | 0.145     | 0.023     | 0.040            | 0.040 | 0.030 | 0.021 |
| 0.00     | 0.10     | 1.10            | 1.07      | 0.152     | 0.018     | 0.040            | 0.040 | 0.028 | 0.018 |
| 0.10     | 0.10     | 1.11            | 1.11      | 0.127     | 0.021     | 0.043            | 0.043 | 0.033 | 0.010 |
| 0.20     | 0.10     | 1.08            | 1.08      | 0.107     | 0.026     | 0.038            | 0.036 | 0.030 | 0.015 |
| 0.30     | 0.10     | 1.08            | 1.07      | 0.098     | 0.017     | 0.040            | 0.040 | 0.031 | 0.021 |
| 0.40     | 0.10     | 1.06            | 1.06      | 0.080     | 0.018     | 0.040            | 0.040 | 0.035 | 0.021 |
| 0.50     | 0.10     | 1.05            | 1.04      | 0.076     | 0.015     | 0.038            | 0.038 | 0.028 | 0.025 |
| 0.60     | 0.10     | 1.07            | 1.07      | 0.060     | 0.017     | 0.046            | 0.046 | 0.043 | 0.031 |
| 0.70     | 0.10     | 0.99            | 0.99      | 0.055     | 0.008     | 0.053            | 0.053 | 0.046 | 0.046 |
| 0.80     | 0.10     | 0.97            | 0.97      | 0.047     | 0.007     | 0.060            | 0.066 | 0.083 | 0.061 |
| 0.80     | 0.00     | 0.78            | 0.98      | 0.050     | 0.012     | 0.074            | 0.074 | 0.081 | 0.053 |
| 0.70     | 0.00     | 0.99            | 0.67      | 0.045     | 0.018     | 0.060            | 0.060 | 0.055 | 0.045 |
| 0.60     | 0.20     | 1.02            | 1.07      | 0.060     | 0.021     | 0.055            | 0.055 | 0.045 | 0.038 |
| 0.50     | 0.20     | 1.04            | 1.07      | 0.078     | 0.021     | 0.043            | 0.043 | 0.026 | 0.026 |
| 0.40     | 0.20     | 1.06            | 1.06      | 0.088     | 0.025     | 0.040            | 0.040 | 0.026 | 0.020 |
| 0.30     | 0.20     | 1.07            | 1.06      | 0.098     | 0.015     | 0.038            | 0.040 | 0.023 | 0.021 |
| 0.20     | 0.00     | 1.08            | 1.00      | 0.106     | 0.026     | 0.040            | 0.040 | 0.033 | 0.018 |
| 0.10     | 0.00     | 1.08            | 1.08      | 0.119     | 0.021     | 0.038            | 0.038 | 0.031 | 0.025 |
| 0.00     | 0.20     | 1.10            | 1.10      | 0.131     | 0.028     | 0.040            | 0.040 | 0.041 | 0.020 |
| -0.10    | 0.20     | 1.11            | 1.10      | 0.144     | 0.031     | 0.041            | 0.041 | 0.031 | 0.020 |
| -0.20    | 0.20     | 1.12            | 1.11      | 0.150     | 0.035     | 0.038            | 0.038 | 0.031 | 0.020 |
| -0.30    | 0.20     | 1.15            | 1.14      | 0.170     | 0.048     | 0.040            | 0.040 | 0.033 | 0.020 |
| -0.40    | 0.70     | 1.15            | 1.13      | 0.105     | 0.056     | 0.041            | 0.041 | 0.038 | 0.023 |
| -0.50    | 0.10     | 1.16            | 1.14      | 0.171     | 0.084     | 0.040            | 0.040 | 0.050 | 0.020 |
| -0.55    | 0.20     | 1.18            | 1.15      | 0.217     | 0.106     | 0.048            | 0.048 | 0.060 | 0.077 |
| -0.60    | 0.20     | 1.17            | 1.14      | 0.190     | 0.119     | 0.071            | 0.071 | 0.084 | 0.040 |
| -0.65    | 0.20     | 1.04            | 1.01      | 0.203     | 0.117     | 0.129            | 0.132 | 0.078 | 0.066 |
| -0.70    | 0.20     | 0.85            | 0.81      | 0.218     | 0.101     | 0.112            | 0.114 | 0.081 | 0.073 |
| -0.75    | 0.20     | 0.84            | 0.80      | 0.220     | 0.043     | 0.079            | 0.081 | 0.083 | 0.079 |
| -0.80    | 0.00     | 0.85            | 0.82      | 0.207     | -0.053    | 0.084            | 0.084 | 0.084 | 0.066 |
| 0.80     | 0.30     | 0.87            | 0.86      | 0.197     | 0.025     | 0.076            | 0.079 | 0.071 | 0.070 |
| -0.75    | 0.20     | 0.20            | 0.87      | 0.175     | 0.091     | 0.071            | 0.091 | 0.073 | 0.076 |
| -0.70    | 0.30     | 0.96            | 0.74      | 0.149     | 0.117     | 0.106            | 0.106 | 0.081 | 0.074 |
| -0.65    | 0.10     | 1.10            | 1.08      | 0.127     | 0.159     | 0.101            | 0.107 | 0.079 | 0.061 |
| -0.60    | 0.20     | 1.18            | 1.16      | 0.150     | 0.154     | 0.063            | 0.061 | 0.081 | 0.040 |
| -0.55    | 0.50     | 1.19            | 1.17      | 0.177     | 0.119     | 0.045            | 0.045 | 0.061 | 0.021 |
| -0.50    | 0.30     | 1.17            | 1.15      | 0.180     | 0.103     | 0.047            | 0.047 | 0.048 | 0.020 |
| -0.40    | 0.70     | 1.18            | 1.17      | 0.169     | 0.073     | 0.045            | 0.045 | 0.038 | 0.020 |
| -0.30    | 0.30     | 1.14            | 1.13      | 0.157     | 0.055     | 0.043            | 0.043 | 0.028 | 0.021 |
| -0.20    | 0.30     | 1.13            | 1.12      | 0.152     | 0.040     | 0.038            | 0.040 | 0.028 | 0.025 |
| -0.10    | 0.30     | 1.11            | 1.10      | 0.139     | 0.040     | 0.036            | 0.036 | 0.026 | 0.020 |
| 0.00     | 0.30     | 1.09            | 1.08      | 0.126     | 0.030     | 0.036            | 0.036 | 0.040 | 0.020 |
| 0.10     | 0.30     | 1.09            | 1.09      | 0.118     | 0.031     | 0.040            | 0.040 | 0.033 | 0.021 |
| 0.20     | 0.30     | 1.09            | 1.08      | 0.109     | 0.035     | 0.038            | 0.038 | 0.036 | 0.018 |
| 0.30     | 0.30     | 1.07            | 1.06      | 0.098     | 0.027     | 0.036            | 0.035 | 0.041 | 0.017 |
| 0.40     | 0.30     | 1.06            | 1.05      | 0.086     | 0.025     | 0.038            | 0.038 | 0.033 | 0.020 |
| 0.50     | 0.30     | 1.05            | 1.04      | 0.075     | 0.027     | 0.043            | 0.043 | 0.038 | 0.025 |
| 0.60     | 0.30     | 1.03            | 1.03      | 0.065     | 0.023     | 0.041            | 0.041 | 0.045 | 0.031 |
| 0.70     | 0.30     | 0.99            | 0.99      | 0.050     | 0.020     | 0.050            | 0.051 | 0.056 | 0.041 |

ORIGINAL PAGE IS  
OF POOR QUALITY

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80     | 0.30     | 0.97            | 0.96      | 0.036     | 0.017     | 0.065      | 0.065 | 0.066 | 0.055 |
| 0.80     | 0.40     | 0.96            | 0.96      | 0.033     | 0.008     | 0.080      | 0.080 | 0.063 | 0.051 |
| 0.70     | 0.40     | 1.00            | 0.99      | 0.055     | 0.017     | 0.061      | 0.061 | 0.060 | 0.046 |
| 0.60     | 0.40     | 1.03            | 1.02      | 0.068     | 0.020     | 0.048      | 0.048 | 0.043 | 0.041 |
| 0.50     | 0.40     | 1.04            | 1.04      | 0.076     | 0.023     | 0.038      | 0.038 | 0.036 | 0.025 |
| 0.40     | 0.40     | 1.05            | 1.04      | 0.088     | 0.025     | 0.036      | 0.076 | 0.033 | 0.023 |
| 0.30     | 0.40     | 1.06            | 1.05      | 0.094     | 0.025     | 0.040      | 0.040 | 0.033 | 0.022 |
| 0.20     | 0.40     | 1.09            | 1.08      | 0.103     | 0.035     | 0.040      | 0.040 | 0.033 | 0.020 |
| 0.10     | 0.40     | 1.08            | 1.07      | 0.114     | 0.031     | 0.036      | 0.036 | 0.035 | 0.020 |
| 0.00     | 0.40     | 1.10            | 1.09      | 0.126     | 0.035     | 0.038      | 0.038 | 0.031 | 0.020 |
| -0.10    | 0.40     | 1.10            | 1.09      | 0.126     | 0.040     | 0.040      | 0.040 | 0.033 | 0.023 |
| -0.20    | 0.40     | 1.12            | 1.11      | 0.138     | 0.048     | 0.036      | 0.036 | 0.035 | 0.018 |
| -0.30    | 0.40     | 1.13            | 1.12      | 0.141     | 0.058     | 0.038      | 0.040 | 0.031 | 0.022 |
| -0.40    | 0.40     | 1.14            | 1.13      | 0.141     | 0.075     | 0.036      | 0.036 | 0.035 | 0.020 |
| -0.50    | 0.40     | 1.17            | 1.15      | 0.149     | 0.098     | 0.040      | 0.040 | 0.040 | 0.018 |
| -0.55    | 0.40     | 1.17            | 1.16      | 0.133     | 0.108     | 0.040      | 0.040 | 0.045 | 0.022 |
| -0.60    | 0.40     | 1.18            | 1.17      | 0.114     | 0.126     | 0.041      | 0.043 | 0.056 | 0.025 |
| -0.65    | 0.40     | 1.21            | 1.19      | 0.095     | 0.135     | 0.063      | 0.065 | 0.070 | 0.042 |
| -0.70    | 0.40     | 1.07            | 1.06      | 0.067     | 0.112     | 0.093      | 0.093 | 0.067 | 0.067 |
| -0.75    | 0.40     | 0.97            | 0.96      | 0.077     | 0.075     | 0.093      | 0.093 | 0.073 | 0.068 |
| -0.80    | 0.40     | 0.92            | 0.91      | 0.115     | 0.032     | 0.078      | 0.078 | 0.072 | 0.070 |
| -0.80    | 0.50     | 1.03            | 1.02      | 0.055     | 0.053     | 0.082      | 0.082 | 0.067 | 0.065 |
| -0.75    | 0.50     | 1.04            | 1.03      | 0.055     | 0.070     | 0.085      | 0.087 | 0.070 | 0.058 |
| -0.70    | 0.50     | 1.14            | 1.13      | 0.057     | 0.103     | 0.078      | 0.077 | 0.068 | 0.050 |
| -0.65    | 0.50     | 1.18            | 1.17      | 0.070     | 0.127     | 0.052      | 0.052 | 0.057 | 0.030 |
| -0.60    | 0.50     | 1.17            | 1.16      | 0.092     | 0.110     | 0.038      | 0.038 | 0.053 | 0.023 |
| -0.55    | 0.50     | 1.17            | 1.16      | 0.105     | 0.100     | 0.038      | 0.038 | 0.038 | 0.022 |
| -0.50    | 0.50     | 1.16            | 1.15      | 0.115     | 0.090     | 0.038      | 0.037 | 0.037 | 0.020 |
| -0.40    | 0.50     | 1.15            | 1.14      | 0.122     | 0.073     | 0.038      | 0.038 | 0.035 | 0.020 |
| -0.30    | 0.50     | 1.14            | 1.13      | 0.123     | 0.055     | 0.035      | 0.075 | 0.035 | 0.020 |
| -0.20    | 0.50     | 1.12            | 1.11      | 0.122     | 0.048     | 0.040      | 0.038 | 0.037 | 0.028 |
| -0.10    | 0.50     | 1.10            | 1.09      | 0.122     | 0.043     | 0.037      | 0.037 | 0.033 | 0.018 |
| 0.00     | 0.50     | 1.09            | 1.08      | 0.117     | 0.037     | 0.038      | 0.038 | 0.033 | 0.025 |
| 0.10     | 0.50     | 1.08            | 1.07      | 0.108     | 0.078     | 0.037      | 0.037 | 0.035 | 0.020 |
| 0.20     | 0.50     | 1.07            | 1.07      | 0.100     | 0.035     | 0.037      | 0.037 | 0.037 | 0.033 |
| 0.30     | 0.50     | 1.07            | 1.06      | 0.098     | 0.033     | 0.037      | 0.037 | 0.035 | 0.020 |
| 0.40     | 0.50     | 1.05            | 1.05      | 0.083     | 0.032     | 0.047      | 0.047 | 0.033 | 0.020 |
| 0.50     | 0.50     | 1.02            | 1.01      | 0.078     | 0.032     | 0.058      | 0.058 | 0.035 | 0.022 |
| 0.60     | 0.50     | 0.96            | 0.96      | 0.063     | 0.027     | 0.048      | 0.048 | 0.043 | 0.025 |
| 0.70     | 0.50     | 0.93            | 0.93      | 0.052     | 0.023     | 0.050      | 0.050 | 0.053 | 0.032 |
| 0.80     | 0.50     | 0.91            | 0.90      | 0.037     | 0.013     | 0.058      | 0.058 | 0.067 | 0.042 |
| 0.80     | 0.60     | 0.92            | 0.92      | 0.043     | 0.025     | 0.058      | 0.058 | 0.058 | 0.043 |
| 0.70     | 0.60     | 0.94            | 0.93      | 0.053     | 0.023     | 0.043      | 0.043 | 0.047 | 0.037 |
| 0.60     | 0.60     | 0.96            | 0.95      | 0.067     | 0.022     | 0.037      | 0.037 | 0.038 | 0.025 |
| 0.50     | 0.60     | 0.97            | 0.96      | 0.078     | 0.027     | 0.040      | 0.042 | 0.038 | 0.020 |
| 0.40     | 0.60     | 0.98            | 0.98      | 0.083     | 0.035     | 0.037      | 0.037 | 0.040 | 0.018 |
| 0.30     | 0.60     | 0.98            | 0.98      | 0.090     | 0.030     | 0.035      | 0.035 | 0.033 | 0.018 |
| 0.20     | 0.60     | 1.03            | 1.03      | 0.103     | 0.043     | 0.062      | 0.062 | 0.035 | 0.018 |
| 0.10     | 0.60     | 1.08            | 1.07      | 0.108     | 0.047     | 0.045      | 0.045 | 0.033 | 0.018 |
| 0.00     | 0.60     | 1.10            | 1.09      | 0.115     | 0.040     | 0.040      | 0.040 | 0.035 | 0.022 |
| -0.10    | 0.60     | 1.11            | 1.11      | 0.105     | 0.038     | 0.035      | 0.035 | 0.036 | 0.021 |
| -0.20    | 0.60     | 1.17            | 1.11      | 0.105     | 0.044     | 0.038      | 0.038 | 0.033 | 0.020 |
| -0.30    | 0.60     | 1.13            | 1.12      | 0.107     | 0.051     | 0.035      | 0.035 | 0.036 | 0.018 |
| -0.40    | 0.60     | 1.17            | 1.17      | 0.104     | 0.068     | 0.036      | 0.036 | 0.035 | 0.020 |
| -0.50    | 0.60     | 1.18            | 1.18      | 0.086     | 0.091     | 0.040      | 0.040 | 0.035 | 0.021 |
| -0.55    | 0.60     | 1.18            | 1.17      | 0.074     | 0.099     | 0.036      | 0.036 | 0.023 | 0.020 |
| -0.60    | 0.60     | 1.20            | 1.20      | 0.066     | 0.101     | 0.040      | 0.040 | 0.040 | 0.028 |
| -0.65    | 0.60     | 1.20            | 1.19      | 0.049     | 0.091     | 0.059      | 0.058 | 0.046 | 0.040 |
| -0.70    | 0.60     | 1.07            | 1.07      | 0.035     | 0.056     | 0.069      | 0.069 | 0.051 | 0.049 |
| -0.75    | 0.60     | 1.07            | 1.06      | 0.025     | 0.023     | 0.067      | 0.063 | 0.054 | 0.053 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80    | 0.60     | 1.05            | 1.04      | 0.016     | -0.043    | 0.066      | 0.066 | 0.063 | 0.061 |
| -0.80    | 0.70     | 1.13            | 1.13      | -0.003    | -0.038    | 0.071      | 0.071 | 0.061 | 0.059 |
| -0.75    | 0.70     | 1.11            | 1.11      | 0.003     | 0.010     | 0.053      | 0.053 | 0.048 | 0.046 |
| -0.70    | 0.70     | 1.13            | 1.12      | 0.010     | 0.049     | 0.058      | 0.058 | 0.044 | 0.041 |
| -0.65    | 0.70     | 1.16            | 1.16      | 0.026     | 0.068     | 0.051      | 0.051 | 0.043 | 0.031 |
| -0.60    | 0.70     | 1.20            | 1.19      | 0.043     | 0.082     | 0.043      | 0.043 | 0.036 | 0.030 |
| -0.55    | 0.70     | 1.17            | 1.16      | 0.053     | 0.081     | 0.043      | 0.043 | 0.035 | 0.023 |
| -0.50    | 0.70     | 1.17            | 1.16      | 0.068     | 0.071     | 0.040      | 0.040 | 0.035 | 0.023 |
| -0.40    | 0.70     | 1.15            | 1.14      | 0.082     | 0.058     | 0.036      | 0.036 | 0.035 | 0.023 |
| -0.30    | 0.70     | 1.15            | 1.15      | 0.092     | 0.043     | 0.040      | 0.040 | 0.035 | 0.028 |
| -0.20    | 0.70     | 1.14            | 1.14      | 0.097     | 0.040     | 0.046      | 0.046 | 0.033 | 0.023 |
| -0.10    | 0.70     | 1.10            | 1.09      | 0.099     | 0.033     | 0.043      | 0.043 | 0.041 | 0.021 |
| 0.00     | 0.70     | 1.04            | 1.04      | 0.104     | 0.028     | 0.053      | 0.053 | 0.038 | 0.021 |
| 0.10     | 0.70     | 1.01            | 1.00      | 0.101     | 0.016     | 0.048      | 0.048 | 0.036 | 0.023 |
| 0.20     | 0.70     | 0.99            | 0.99      | 0.092     | 0.031     | 0.048      | 0.048 | 0.035 | 0.023 |
| 0.30     | 0.70     | 0.99            | 0.98      | 0.082     | 0.035     | 0.044      | 0.044 | 0.035 | 0.020 |
| 0.40     | 0.70     | 0.99            | 0.99      | 0.076     | 0.028     | 0.051      | 0.051 | 0.031 | 0.021 |
| 0.50     | 0.70     | 0.97            | 0.97      | 0.069     | 0.021     | 0.043      | 0.043 | 0.036 | 0.025 |
| 0.60     | 0.70     | 0.96            | 0.95      | 0.064     | 0.018     | 0.040      | 0.040 | 0.038 | 0.023 |
| 0.70     | 0.70     | 0.97            | 0.96      | 0.049     | 0.017     | 0.050      | 0.050 | 0.054 | 0.034 |
| 0.80     | 0.70     | 0.94            | 0.94      | 0.044     | 0.017     | 0.056      | 0.056 | 0.059 | 0.035 |
| 0.80     | 0.80     | 0.95            | 0.95      | 0.039     | 0.022     | 0.057      | 0.057 | 0.059 | 0.037 |
| 0.70     | 0.80     | 0.97            | 0.97      | 0.052     | 0.024     | 0.049      | 0.049 | 0.049 | 0.037 |
| 0.60     | 0.80     | 0.99            | 0.99      | 0.064     | 0.022     | 0.047      | 0.047 | 0.042 | 0.022 |
| 0.50     | 0.80     | 0.99            | 0.98      | 0.069     | 0.022     | 0.045      | 0.045 | 0.042 | 0.029 |
| 0.40     | 0.80     | 1.01            | 1.00      | 0.077     | 0.024     | 0.047      | 0.047 | 0.052 | 0.029 |
| 0.30     | 0.80     | 1.01            | 1.00      | 0.074     | 0.034     | 0.044      | 0.044 | 0.037 | 0.024 |
| 0.20     | 0.80     | 1.01            | 1.00      | 0.069     | 0.032     | 0.045      | 0.045 | 0.039 | 0.027 |
| 0.10     | 0.80     | 1.01            | 1.01      | 0.059     | 0.025     | 0.049      | 0.049 | 0.040 | 0.027 |
| 0.00     | 0.80     | 1.03            | 1.03      | 0.071     | 0.027     | 0.056      | 0.056 | 0.044 | 0.034 |
| -0.10    | 0.80     | 1.07            | 1.07      | 0.077     | 0.035     | 0.062      | 0.062 | 0.045 | 0.035 |
| -0.20    | 0.80     | 1.07            | 1.07      | 0.074     | 0.039     | 0.054      | 0.054 | 0.049 | 0.044 |
| -0.30    | 0.80     | 1.08            | 1.07      | 0.074     | 0.045     | 0.052      | 0.052 | 0.047 | 0.045 |
| -0.40    | 0.80     | 1.17            | 1.17      | 0.054     | 0.049     | 0.059      | 0.059 | 0.059 | 0.045 |
| -0.50    | 0.80     | 1.20            | 1.19      | 0.037     | 0.050     | 0.056      | 0.056 | 0.052 | 0.054 |
| -0.55    | 0.80     | 1.20            | 1.20      | 0.022     | 0.049     | 0.061      | 0.061 | 0.052 | 0.056 |
| -0.60    | 0.80     | 1.19            | 1.19      | 0.005     | 0.056     | 0.057      | 0.057 | 0.064 | 0.052 |
| -0.65    | 0.80     | 1.20            | 1.19      | -0.010    | 0.052     | 0.057      | 0.057 | 0.054 | 0.049 |
| -0.70    | 0.80     | 1.19            | 1.18      | -0.029    | 0.030     | 0.064      | 0.064 | 0.064 | 0.059 |
| -0.75    | 0.80     | 1.19            | 1.19      | -0.042    | 0.008     | 0.072      | 0.072 | 0.071 | 0.057 |
| -0.80    | 0.80     | 1.17            | 1.16      | -0.064    | -0.047    | 0.076      | 0.077 | 0.081 | 0.067 |
| -0.80    | 0.80     | 1.21            | 1.20      | -0.074    | -0.047    | 0.076      | 0.076 | 0.081 | 0.067 |
| -0.80    | 0.70     | 1.13            | 1.12      | 0.005     | -0.044    | 0.057      | 0.057 | 0.062 | 0.069 |
| -0.80    | 0.60     | 1.09            | 1.09      | 0.032     | -0.039    | 0.071      | 0.069 | 0.073 | 0.059 |
| -0.80    | 0.50     | 1.03            | 1.02      | 0.044     | -0.047    | 0.079      | 0.078 | 0.067 | 0.078 |
| -0.80    | 0.40     | 0.98            | 0.97      | 0.073     | -0.078    | 0.069      | 0.069 | 0.064 | 0.086 |
| -0.80    | 0.30     | 0.94            | 0.92      | 0.138     | -0.128    | 0.091      | 0.091 | 0.064 | 0.079 |
| -0.80    | 0.20     | 0.87            | 0.84      | 0.251     | -0.167    | 0.101      | 0.098 | 0.081 | 0.087 |
| -0.80    | 0.10     | 0.67            | 0.62      | 0.164     | -0.140    | 0.126      | 0.125 | 0.078 | 0.106 |
| -0.80    | 0.00     | 0.63            | 0.62      | 0.071     | -0.078    | 0.096      | 0.096 | 0.056 | 0.086 |
| -0.80    | -0.10    | 0.60            | 0.59      | 0.081     | 0.013     | 0.081      | 0.081 | 0.061 | 0.078 |
| -0.80    | -0.20    | 0.67            | 0.64      | 0.147     | 0.073     | 0.106      | 0.105 | 0.079 | 0.083 |
| -0.80    | -0.30    | 0.85            | 0.82      | 0.179     | 0.105     | 0.071      | 0.071 | 0.066 | 0.064 |
| -0.80    | -0.40    | 0.90            | 0.89      | 0.103     | 0.056     | 0.067      | 0.067 | 0.079 | 0.057 |
| -0.80    | -0.50    | 1.00            | 1.00      | 0.083     | 0.046     | 0.078      | 0.078 | 0.071 | 0.054 |
| -0.80    | -0.60    | 1.08            | 1.07      | 0.098     | 0.039     | 0.073      | 0.073 | 0.061 | 0.061 |
| -0.80    | -0.70    | 1.15            | 1.14      | 0.073     | 0.024     | 0.067      | 0.069 | 0.061 | 0.059 |
| -0.80    | -0.80    | 1.14            | 1.14      | -0.027    | 0.046     | 0.086      | 0.088 | 0.100 | 0.076 |
| -0.85    | 0.80     | 1.17            | 1.16      | -0.068    | -0.098    | 0.083      | 0.083 | 0.083 | 0.065 |
| -0.85    | 0.70     | 1.14            | 1.14      | 0.002     | -0.097    | 0.075      | 0.075 | 0.067 | 0.068 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.85    | 0.60     | 1.09            | 1.07      | 0.028     | -0.143    | 0.078      | 0.078 | 0.070 | 0.088 |
| -0.85    | 0.50     | 1.04            | 1.02      | 0.048     | -0.123    | 0.093      | 0.095 | 0.070 | 0.082 |
| -0.85    | 0.40     | 1.00            | 0.98      | 0.077     | -0.160    | 0.087      | 0.090 | 0.075 | 0.080 |
| -0.85    | 0.30     | 0.95            | 0.91      | 0.160     | -0.180    | 0.092      | 0.093 | 0.072 | 0.080 |
| -0.85    | 0.20     | 0.80            | 0.74      | 0.185     | -0.183    | 0.127      | 0.127 | 0.082 | 0.113 |
| -0.85    | 0.10     | 0.60            | 0.56      | 0.098     | -0.132    | 0.128      | 0.127 | 0.075 | 0.103 |
| -0.85    | 0.00     | 0.58            | 0.57      | 0.020     | -0.065    | 0.082      | 0.082 | 0.053 | 0.080 |
| -0.85    | -0.10    | 0.54            | 0.53      | 0.022     | 0.015     | 0.082      | 0.082 | 0.058 | 0.083 |
| -0.85    | -0.20    | 0.59            | 0.56      | 0.092     | 0.090     | 0.122      | 0.122 | 0.075 | 0.105 |
| -0.85    | -0.30    | 0.82            | 0.79      | 0.157     | 0.138     | 0.095      | 0.093 | 0.072 | 0.075 |
| -0.85    | -0.40    | 0.92            | 0.90      | 0.123     | 0.105     | 0.087      | 0.087 | 0.068 | 0.065 |
| -0.85    | -0.50    | 1.00            | 0.99      | 0.093     | 0.077     | 0.080      | 0.080 | 0.058 | 0.065 |
| -0.85    | -0.60    | 1.06            | 1.05      | 0.085     | 0.072     | 0.080      | 0.082 | 0.067 | 0.060 |
| -0.85    | -0.70    | 1.09            | 1.08      | 0.053     | 0.075     | 0.078      | 0.080 | 0.067 | 0.063 |
| -0.85    | -0.80    | 1.10            | 1.09      | -0.037    | 0.095     | 0.090      | 0.092 | 0.097 | 0.080 |
| -0.90    | 0.80     | 1.10            | 1.07      | -0.062    | -0.244    | 0.100      | 0.100 | 0.088 | 0.078 |
| -0.90    | 0.70     | 1.10            | 1.06      | -0.008    | -0.259    | 0.098      | 0.100 | 0.073 | 0.085 |
| -0.90    | 0.60     | 1.08            | 1.04      | 0.025     | -0.281    | 0.101      | 0.105 | 0.075 | 0.093 |
| -0.90    | 0.50     | 1.05            | 1.00      | 0.035     | -0.284    | 0.095      | 0.101 | 0.081 | 0.100 |
| -0.90    | 0.40     | 1.00            | 0.95      | 0.083     | -0.279    | 0.101      | 0.110 | 0.071 | 0.100 |
| -0.90    | 0.30     | 0.89            | 0.82      | 0.153     | -0.263    | 0.118      | 0.118 | 0.078 | 0.095 |
| -0.90    | 0.20     | 0.64            | 0.58      | 0.126     | -0.183    | 0.145      | 0.141 | 0.090 | 0.140 |
| -0.90    | 0.10     | 0.45            | 0.42      | 0.058     | -0.081    | 0.113      | 0.108 | 0.071 | 0.110 |
| -0.90    | 0.00     | 0.53            | 0.52      | 0.000     | -0.048    | 0.078      | 0.076 | 0.058 | 0.068 |
| -0.90    | -0.10    | 0.49            | 0.48      | 0.000     | -0.010    | 0.075      | 0.073 | 0.073 | 0.065 |
| -0.90    | -0.20    | 0.43            | 0.40      | 0.063     | 0.052     | 0.115      | 0.110 | 0.101 | 0.091 |
| -0.90    | -0.30    | 0.65            | 0.61      | 0.098     | 0.115     | 0.136      | 0.143 | 0.081 | 0.123 |
| -0.90    | -0.40    | 0.86            | 0.83      | 0.126     | 0.168     | 0.103      | 0.105 | 0.073 | 0.080 |
| -0.90    | -0.50    | 0.93            | 0.91      | 0.081     | 0.176     | 0.096      | 0.098 | 0.065 | 0.083 |
| -0.90    | -0.60    | 0.96            | 0.93      | 0.063     | 0.186     | 0.111      | 0.111 | 0.066 | 0.091 |
| -0.90    | -0.70    | 1.00            | 0.97      | 0.038     | 0.193     | 0.093      | 0.093 | 0.078 | 0.091 |
| -0.90    | -0.80    | 1.03            | 1.00      | -0.048    | 0.234     | 0.093      | 0.095 | 0.096 | 0.080 |
| -0.93    | 0.80     | 1.00            | 1.03      | -0.047    | -0.288    | 0.074      | 0.096 | 0.098 | 0.069 |
| -0.93    | 0.70     | 1.03            | 0.96      | 0.013     | -0.338    | 0.108      | 0.113 | 0.084 | 0.091 |
| -0.93    | 0.60     | 1.05            | 0.98      | 0.019     | -0.767    | 0.108      | 0.113 | 0.071 | 0.087 |
| -0.93    | 0.50     | 1.02            | 0.97      | 0.035     | -0.374    | 0.103      | 0.101 | 0.069 | 0.099 |
| -0.93    | 0.40     | 1.01            | 0.74      | 0.049     | -0.748    | 0.106      | 0.104 | 0.082 | 0.096 |
| -0.93    | 0.30     | 0.86            | 0.79      | 0.123     | -0.283    | 0.133      | 0.131 | 0.077 | 0.098 |
| -0.93    | 0.20     | 0.55            | 0.49      | 0.079     | -0.163    | 0.168      | 0.167 | 0.089 | 0.146 |
| -0.93    | 0.10     | 0.41            | 0.39      | 0.049     | -0.052    | 0.106      | 0.108 | 0.062 | 0.096 |
| -0.93    | 0.00     | 0.49            | 0.48      | -0.003    | -0.015    | 0.004      | 0.084 | 0.071 | 0.066 |
| -0.93    | -0.10    | 0.46            | 0.45      | -0.010    | -0.029    | 0.081      | 0.081 | 0.059 | 0.067 |
| -0.93    | -0.20    | 0.36            | 0.34      | 0.019     | 0.002     | 0.106      | 0.108 | 0.061 | 0.103 |
| -0.93    | -0.30    | 0.56            | 0.57      | 0.074     | 0.091     | 0.153      | 0.156 | 0.086 | 0.125 |
| -0.93    | -0.40    | 0.77            | 0.73      | 0.081     | 0.167     | 0.126      | 0.126 | 0.069 | 0.106 |
| -0.93    | -0.50    | 0.88            | 0.85      | 0.076     | 0.195     | 0.114      | 0.119 | 0.074 | 0.094 |
| -0.93    | -0.60    | 0.93            | 0.89      | 0.047     | 0.236     | 0.098      | 0.103 | 0.072 | 0.093 |
| -0.93    | -0.70    | 0.97            | 0.92      | 0.029     | 0.271     | 0.103      | 0.106 | 0.082 | 0.089 |
| -0.93    | -0.80    | 1.01            | 0.96      | -0.029    | 0.284     | 0.106      | 0.109 | 0.086 | 0.077 |
| -0.95    | 0.80     | 1.01            | 0.94      | -0.047    | -0.330    | 0.121      | 0.127 | 0.097 | 0.091 |
| -0.95    | 0.70     | 0.97            | 0.89      | 0.005     | -0.359    | 0.144      | 0.141 | 0.084 | 0.076 |
| -0.95    | 0.60     | 0.95            | 0.85      | 0.023     | -0.419    | 0.092      | 0.097 | 0.067 | 0.094 |
| -0.95    | 0.50     | 0.95            | 0.85      | 0.037     | -0.391    | 0.116      | 0.114 | 0.064 | 0.097 |
| -0.95    | 0.40     | 0.84            | 0.75      | 0.069     | -0.345    | 0.127      | 0.124 | 0.077 | 0.099 |
| -0.95    | 0.30     | 0.67            | 0.58      | 0.085     | -0.278    | 0.153      | 0.156 | 0.079 | 0.126 |
| -0.95    | 0.20     | 0.44            | 0.39      | 0.028     | -0.099    | 0.168      | 0.161 | 0.097 | 0.153 |
| -0.95    | 0.10     | 0.38            | 0.76      | 0.013     | -0.018    | 0.122      | 0.124 | 0.065 | 0.092 |
| -0.95    | 0.00     | 0.47            | 0.46      | -0.013    | -0.007    | 0.087      | 0.084 | 0.054 | 0.070 |
| -0.95    | -0.10    | 0.44            | 0.44      | -0.017    | -0.017    | 0.080      | 0.080 | 0.047 | 0.055 |
| -0.95    | -0.20    | 0.33            | 0.31      | 0.003     | 0.000     | 0.099      | 0.109 | 0.060 | 0.092 |
| -0.95    | -0.30    | 0.54            | 0.51      | 0.034     | 0.087     | 0.139      | 0.146 | 0.079 | 0.136 |
| -0.95    | -0.40    | 0.76            | 0.72      | 0.062     | 0.183     | 0.127      | 0.127 | 0.080 | 0.104 |
| -0.95    | -0.50    | 0.86            | 0.82      | 0.049     | 0.223     | 0.102      | 0.102 | 0.067 | 0.097 |
| -0.95    | -0.60    | 0.92            | 0.87      | 0.042     | 0.267     | 0.104      | 0.109 | 0.085 | 0.097 |
| -0.95    | -0.70    | 0.96            | 0.91      | 0.027     | 0.300     | 0.107      | 0.116 | 0.080 | 0.087 |
| -0.95    | -0.80    | 1.00            | 0.95      | -0.018    | 0.307     | 0.112      | 0.117 | 0.082 | 0.079 |

Table C-6, Station 11, X(H) = + 1.0 Exit

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.80     | 0.00     | 1.06            | 1.05      | 0.008     | 0.007     | 0.059            | 0.059 | 0.061 | 0.044 |
| 0.70     | 0.00     | 1.08            | 1.08      | 0.013     | 0.005     | 0.046            | 0.046 | 0.051 | 0.038 |
| 0.60     | 0.00     | 1.09            | 1.09      | 0.011     | 0.008     | 0.041            | 0.043 | 0.043 | 0.028 |
| 0.50     | 0.00     | 1.09            | 1.09      | 0.016     | 0.011     | 0.041            | 0.041 | 0.041 | 0.026 |
| 0.40     | 0.00     | 1.10            | 1.10      | 0.021     | 0.013     | 0.038            | 0.038 | 0.034 | 0.021 |
| 0.30     | 0.00     | 1.10            | 1.10      | 0.028     | 0.016     | 0.043            | 0.041 | 0.034 | 0.015 |
| 0.20     | 0.00     | 1.12            | 1.12      | 0.033     | 0.018     | 0.036            | 0.036 | 0.033 | 0.016 |
| 0.10     | 0.00     | 1.12            | 1.12      | 0.039     | 0.018     | 0.036            | 0.036 | 0.041 | 0.015 |
| 0.00     | 0.00     | 1.13            | 1.12      | 0.049     | 0.016     | 0.039            | 0.039 | 0.033 | 0.031 |
| -0.10    | 0.00     | 1.11            | 1.10      | 0.062     | 0.023     | 0.046            | 0.046 | 0.039 | 0.020 |
| -0.20    | 0.00     | 1.07            | 1.06      | 0.079     | 0.028     | 0.084            | 0.084 | 0.074 | 0.056 |
| -0.30    | 0.00     | 0.85            | 0.84      | 0.070     | 0.007     | 0.147            | 0.151 | 0.103 | 0.093 |
| -0.40    | 0.00     | 0.58            | 0.56      | 0.062     | 0.018     | 0.111            | 0.113 | 0.108 | 0.087 |
| -0.50    | 0.00     | 0.50            | 0.47      | 0.110     | 0.049     | 0.090            | 0.092 | 0.095 | 0.079 |
| -0.55    | 0.00     | 0.50            | 0.47      | 0.115     | 0.057     | 0.102            | 0.100 | 0.111 | 0.090 |
| -0.60    | 0.00     | 0.54            | 0.50      | 0.126     | 0.036     | 0.110            | 0.110 | 0.110 | 0.105 |
| -0.65    | 0.00     | 0.56            | 0.52      | 0.152     | 0.020     | 0.129            | 0.128 | 0.124 | 0.105 |
| -0.70    | 0.00     | 0.61            | 0.56      | 0.165     | -0.016    | 0.144            | 0.147 | 0.124 | 0.133 |
| -0.75    | 0.00     | 0.69            | 0.63      | 0.169     | -0.100    | 0.138            | 0.141 | 0.118 | 0.128 |
| -0.80    | 0.00     | 0.74            | 0.68      | 0.160     | -0.138    | 0.146            | 0.149 | 0.110 | 0.128 |
| -0.80    | -0.10    | 0.56            | 0.48      | 0.211     | -0.020    | 0.136            | 0.138 | 0.110 | 0.162 |
| -0.75    | -0.10    | 0.56            | 0.48      | 0.231     | -0.013    | 0.131            | 0.129 | 0.118 | 0.144 |
| -0.70    | -0.10    | 0.51            | 0.44      | 0.198     | -0.013    | 0.111            | 0.108 | 0.113 | 0.124 |
| -0.65    | -0.10    | 0.50            | 0.44      | 0.182     | -0.016    | 0.103            | 0.098 | 0.115 | 0.121 |
| -0.60    | -0.10    | 0.47            | 0.42      | 0.141     | 0.013     | 0.092            | 0.088 | 0.103 | 0.095 |
| -0.55    | -0.10    | 0.47            | 0.44      | 0.110     | 0.015     | 0.087            | 0.087 | 0.085 | 0.077 |
| -0.50    | -0.10    | 0.50            | 0.40      | 0.092     | 0.011     | 0.092            | 0.092 | 0.079 | 0.079 |
| -0.40    | -0.10    | 0.62            | 0.60      | 0.070     | -0.010    | 0.113            | 0.113 | 0.103 | 0.082 |
| -0.30    | -0.10    | 0.86            | 0.84      | 0.082     | 0.003     | 0.141            | 0.144 | 0.106 | 0.090 |
| -0.20    | -0.10    | 1.08            | 1.08      | 0.082     | -0.002    | 0.074            | 0.074 | 0.069 | 0.054 |
| -0.10    | -0.10    | 1.09            | 1.09      | 0.067     | 0.002     | 0.047            | 0.047 | 0.039 | 0.021 |
| 0.00     | -0.10    | 1.10            | 1.10      | 0.056     | 0.008     | 0.038            | 0.038 | 0.034 | 0.018 |
| 0.10     | -0.10    | 1.10            | 1.10      | 0.046     | 0.007     | 0.037            | 0.037 | 0.037 | 0.021 |
| 0.20     | -0.10    | 1.12            | 1.11      | 0.039     | 0.007     | 0.039            | 0.039 | 0.029 | 0.024 |
| 0.30     | -0.10    | 1.08            | 1.08      | 0.024     | 0.010     | 0.037            | 0.037 | 0.031 | 0.016 |
| 0.40     | -0.10    | 1.08            | 1.08      | 0.020     | 0.008     | 0.039            | 0.039 | 0.074 | 0.021 |
| 0.50     | -0.10    | 1.09            | 1.09      | 0.020     | 0.008     | 0.042            | 0.042 | 0.034 | 0.021 |
| 0.60     | -0.10    | 1.06            | 1.06      | 0.013     | 0.005     | 0.044            | 0.044 | 0.046 | 0.026 |
| 0.70     | -0.10    | 1.06            | 1.06      | 0.000     | 0.000     | 0.057            | 0.057 | 0.057 | 0.036 |
| 0.80     | -0.10    | 1.05            | 1.04      | 0.003     | 0.002     | 0.057            | 0.059 | 0.067 | 0.047 |
| 0.80     | -0.20    | 1.05            | 1.05      | 0.007     | -0.002    | 0.055            | 0.055 | 0.067 | 0.046 |
| 0.70     | -0.20    | 1.06            | 1.06      | 0.013     | 0.002     | 0.055            | 0.055 | 0.055 | 0.033 |
| 0.60     | -0.20    | 1.09            | 1.09      | 0.010     | -0.002    | 0.047            | 0.047 | 0.046 | 0.026 |
| 0.50     | -0.20    | 1.08            | 1.08      | 0.018     | -0.002    | 0.041            | 0.041 | 0.037 | 0.023 |
| 0.40     | -0.20    | 1.08            | 1.08      | 0.021     | 0.002     | 0.039            | 0.039 | 0.034 | 0.021 |
| 0.30     | -0.20    | 1.09            | 1.09      | 0.028     | 0.003     | 0.036            | 0.036 | 0.033 | 0.016 |
| 0.20     | -0.20    | 1.09            | 1.09      | 0.037     | -0.002    | 0.041            | 0.041 | 0.033 | 0.018 |
| 0.10     | -0.20    | 1.08            | 1.08      | 0.037     | -0.003    | 0.039            | 0.039 | 0.033 | 0.020 |
| 0.00     | -0.20    | 1.09            | 1.07      | 0.054     | -0.008    | 0.042            | 0.042 | 0.033 | 0.021 |
| -0.10    | -0.20    | 1.10            | 1.10      | 0.063     | -0.015    | 0.044            | 0.044 | 0.036 | 0.029 |
| -0.20    | -0.20    | 1.10            | 1.10      | 0.078     | -0.021    | 0.065            | 0.065 | 0.062 | 0.046 |
| -0.30    | -0.20    | 0.90            | 0.80      | 0.081     | -0.023    | 0.143            | 0.147 | 0.096 | 0.083 |
| -0.40    | -0.20    | 0.65            | 0.63      | 0.067     | -0.037    | 0.103            | 0.106 | 0.094 | 0.078 |
| -0.50    | -0.20    | 0.55            | 0.53      | 0.080     | -0.031    | 0.090            | 0.091 | 0.085 | 0.077 |
| -0.55    | -0.20    | 0.52            | 0.50      | 0.083     | -0.034    | 0.071            | 0.093 | 0.083 | 0.078 |
| -0.60    | -0.20    | 0.52            | 0.49      | 0.104     | -0.041    | 0.098            | 0.099 | 0.096 | 0.083 |
| -0.65    | -0.20    | 0.52            | 0.49      | 0.117     | -0.028    | 0.098            | 0.101 | 0.103 | 0.090 |
| -0.70    | -0.20    | 0.59            | 0.55      | 0.130     | -0.013    | 0.120            | 0.125 | 0.114 | 0.099 |
| -0.75    | -0.20    | 0.63            | 0.59      | 0.151     | 0.028     | 0.114            | 0.120 | 0.112 | 0.107 |
| -0.80    | -0.20    | 0.70            | 0.65      | 0.161     | 0.083     | 0.133            | 0.132 | 0.103 | 0.119 |

| <i>y</i> | <i>z</i> | U rms | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'$ rms | $\bar{U}'$ | $V'$  | $\bar{W}'$ |
|----------|----------|-------|-----------|-----------|-----------|----------|------------|-------|------------|
| -0.80    | -0.30    | 0.77  | 0.75      | 0.68      | 0.078     | 0.098    | 0.098      | 0.083 | 0.083      |
| -0.75    | -0.30    | 0.71  | 0.70      | 0.62      | 0.026     | 0.109    | 0.111      | 0.098 | 0.088      |
| -0.70    | -0.30    | 0.66  | 0.65      | 0.47      | -0.016    | 0.112    | 0.116      | 0.104 | 0.086      |
| -0.65    | -0.30    | 0.63  | 0.61      | 0.059     | -0.037    | 0.111    | 0.114      | 0.094 | 0.088      |
| -0.60    | -0.30    | 0.63  | 0.61      | 0.063     | -0.039    | 0.109    | 0.112      | 0.096 | 0.080      |
| -0.55    | -0.30    | 0.63  | 0.61      | 0.060     | -0.046    | 0.103    | 0.106      | 0.090 | 0.073      |
| -0.50    | -0.30    | 0.64  | 0.62      | 0.065     | -0.054    | 0.098    | 0.101      | 0.085 | 0.080      |
| -0.40    | -0.30    | 0.80  | 0.78      | 0.44      | -0.041    | 0.122    | 0.123      | 0.096 | 0.091      |
| -0.30    | -0.30    | 0.56  | 0.55      | 0.060     | -0.054    | 0.110    | 0.112      | 0.091 | 0.081      |
| -0.20    | -0.30    | 1.09  | 1.08      | -0.065    | -0.041    | 0.057    | 0.057      | 0.055 | 0.041      |
| -0.10    | -0.30    | 1.09  | 1.09      | -0.057    | -0.029    | 0.041    | 0.041      | 0.036 | 0.023      |
| 0.00     | -0.30    | 1.09  | 1.08      | 0.047     | -0.018    | 0.036    | 0.036      | 0.032 | 0.018      |
| 0.10     | -0.30    | 1.09  | 1.09      | -0.041    | -0.013    | 0.041    | 0.041      | 0.031 | 0.018      |
| 0.20     | -0.30    | 1.09  | 1.09      | 0.036     | -0.006    | 0.037    | 0.037      | 0.037 | 0.019      |
| 0.30     | -0.30    | 1.08  | 1.08      | 0.031     | -0.002    | 0.037    | 0.037      | 0.031 | 0.021      |
| 0.40     | -0.30    | 1.07  | 1.07      | 0.024     | -0.002    | 0.037    | 0.037      | 0.034 | 0.019      |
| 0.50     | -0.30    | 1.08  | 1.08      | -0.019    | -0.002    | 0.039    | 0.039      | 0.036 | 0.021      |
| 0.60     | -0.30    | 1.06  | 1.06      | -0.010    | -0.005    | 0.049    | 0.050      | 0.047 | 0.028      |
| 0.70     | -0.30    | 1.06  | 1.06      | 0.008     | -0.003    | 0.049    | 0.049      | 0.063 | 0.037      |
| 0.80     | -0.20    | 1.04  | 1.04      | -0.015    | -0.002    | 0.058    | 0.058      | 0.071 | 0.044      |
| 0.80     | -0.40    | 1.06  | 1.05      | 0.005     | -0.005    | 0.062    | 0.062      | 0.063 | 0.037      |
| -0.70    | -0.40    | 1.06  | 1.06      | -0.013    | -0.000    | 0.050    | 0.050      | 0.067 | 0.034      |
| 0.60     | -0.40    | 1.08  | 1.08      | -0.018    | -0.003    | 0.044    | 0.045      | 0.047 | 0.074      |
| 0.50     | -0.40    | 1.09  | 1.07      | 0.015     | -0.005    | 0.041    | 0.041      | 0.054 | 0.026      |
| 0.40     | -0.40    | 1.09  | 1.09      | -0.023    | -0.008    | 0.037    | 0.037      | 0.039 | 0.023      |
| 0.30     | -0.40    | 1.09  | 1.09      | -0.034    | -0.013    | 0.041    | 0.039      | 0.036 | 0.021      |
| 0.20     | -0.40    | 1.03  | 1.08      | 0.026     | -0.013    | 0.041    | 0.039      | 0.044 | 0.021      |
| 0.10     | -0.40    | 1.00  | 1.00      | 0.039     | -0.018    | 0.039    | 0.037      | 0.041 | 0.018      |
| 0.00     | -0.40    | 1.02  | 1.02      | 0.042     | -0.023    | 0.039    | 0.039      | 0.031 | 0.019      |
| -0.10    | -0.40    | 1.08  | 1.08      | 0.044     | -0.032    | 0.042    | 0.042      | 0.036 | 0.024      |
| -0.20    | -0.40    | 1.10  | 1.09      | 0.052     | -0.044    | 0.045    | 0.045      | 0.044 | 0.026      |
| -0.30    | -0.40    | 1.05  | 1.04      | 0.044     | -0.054    | 0.060    | 0.070      | 0.063 | 0.057      |
| -0.40    | -0.40    | 0.87  | 0.86      | 0.037     | -0.058    | 0.107    | 0.110      | 0.081 | 0.080      |
| -0.50    | -0.40    | 0.77  | 0.76      | 0.023     | -0.057    | 0.104    | 0.106      | 0.093 | 0.074      |
| -0.55    | -0.40    | 0.74  | 0.73      | 0.021     | -0.050    | 0.093    | 0.093      | 0.091 | 0.067      |
| -0.60    | -0.40    | 0.74  | 0.73      | 0.011     | -0.045    | 0.091    | 0.093      | 0.084 | 0.065      |
| -0.65    | -0.40    | 0.76  | 0.75      | 0.008     | -0.035    | 0.094    | 0.098      | 0.089 | 0.064      |
| -0.70    | -0.40    | 0.79  | 0.79      | 0.007     | -0.003    | 0.093    | 0.094      | 0.081 | 0.066      |
| -0.75    | -0.40    | 0.81  | 0.80      | -0.003    | 0.040     | 0.093    | 0.094      | 0.078 | 0.071      |
| -0.80    | -0.40    | 0.84  | 0.83      | -0.012    | 0.094     | 0.084    | 0.084      | 0.073 | 0.069      |
| -0.80    | -0.50    | 0.92  | 0.91      | -0.035    | 0.078     | 0.074    | 0.074      | 0.068 | 0.063      |
| -0.75    | -0.50    | 0.90  | 0.89      | -0.038    | 0.036     | 0.073    | 0.073      | 0.068 | 0.060      |
| -0.70    | -0.50    | 0.89  | 0.88      | -0.035    | 0.000     | 0.081    | 0.081      | 0.079 | 0.060      |
| -0.65    | -0.50    | 0.87  | 0.88      | -0.025    | 0.020     | 0.081    | 0.083      | 0.076 | 0.061      |
| -0.60    | -0.50    | 0.90  | 0.90      | -0.021    | -0.031    | 0.088    | 0.089      | 0.084 | 0.066      |
| -0.55    | -0.50    | 0.90  | 0.89      | -0.012    | -0.045    | 0.096    | 0.098      | 0.081 | 0.073      |
| -0.50    | -0.50    | 0.93  | 0.97      | -0.000    | -0.050    | 0.101    | 0.103      | 0.073 | 0.074      |
| -0.40    | -0.50    | 1.05  | 1.04      | -0.017    | -0.063    | 0.088    | 0.089      | 0.063 | 0.060      |
| -0.30    | -0.50    | 1.11  | 1.11      | -0.031    | -0.058    | 0.050    | 0.050      | 0.038 | 0.036      |
| -0.20    | -0.50    | 1.11  | 1.11      | -0.048    | -0.048    | 0.040    | 0.040      | 0.031 | 0.025      |
| -0.10    | -0.50    | 1.11  | 1.11      | -0.040    | -0.033    | 0.040    | 0.040      | 0.030 | 0.021      |
| 0.00     | -0.50    | 1.10  | 1.10      | 0.036     | -0.025    | 0.038    | 0.038      | 0.028 | 0.020      |
| 0.10     | -0.50    | 1.10  | 1.09      | 0.030     | -0.020    | 0.075    | 0.075      | 0.031 | 0.018      |
| 0.20     | -0.50    | 1.10  | 1.10      | 0.030     | -0.013    | 0.018    | 0.030      | 0.031 | 0.021      |
| 0.30     | -0.50    | 1.10  | 1.10      | 0.025     | -0.008    | 0.078    | 0.078      | 0.030 | 0.026      |
| 0.40     | -0.50    | 1.09  | 1.09      | 0.023     | -0.007    | 0.040    | 0.040      | 0.033 | 0.025      |
| 0.50     | -0.50    | 1.10  | 1.09      | 0.023     | -0.010    | 0.043    | 0.043      | 0.035 | 0.023      |
| 0.60     | -0.50    | 1.08  | 1.08      | 0.021     | -0.007    | 0.043    | 0.043      | 0.046 | 0.020      |
| 0.70     | -0.50    | 1.08  | 1.08      | 0.018     | -0.007    | 0.051    | 0.051      | 0.061 | 0.025      |
| 0.80     | -0.50    | 1.06  | 1.06      | 0.013     | -0.007    | 0.058    | 0.058      | 0.060 | 0.041      |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | <i>Urms</i> | <i>U</i> | <i>V</i> | <i>W</i> | <i>U'</i> rms | <i>u'</i> | <i>v'</i> | <i>w'</i> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.80     | -0.60    | 1.08        | 1.08     | 0.017    | -0.013   | 0.060         | 0.060     | 0.053     | 0.038     |
| 0.70     | -0.60    | 1.10        | 1.10     | 0.015    | -0.008   | 0.046         | 0.046     | 0.060     | 0.035     |
| 0.60     | -0.60    | 1.10        | 1.10     | 0.028    | -0.010   | 0.046         | 0.046     | 0.055     | 0.025     |
| 0.50     | -0.60    | 1.10        | 1.10     | 0.020    | -0.008   | 0.045         | 0.045     | 0.041     | 0.025     |
| 0.40     | -0.60    | 1.11        | 1.10     | 0.021    | -0.012   | 0.041         | 0.041     | 0.036     | 0.023     |
| 0.30     | -0.60    | 1.11        | 1.11     | 0.028    | -0.018   | 0.046         | 0.046     | 0.028     | 0.018     |
| 0.20     | -0.60    | 1.11        | 1.11     | 0.028    | -0.018   | 0.045         | 0.045     | 0.033     | 0.018     |
| 0.10     | -0.60    | 1.11        | 1.11     | 0.026    | -0.023   | 0.036         | 0.036     | 0.038     | 0.018     |
| 0.00     | -0.60    | 1.11        | 1.11     | 0.035    | -0.028   | 0.040         | 0.040     | 0.040     | 0.020     |
| -0.10    | -0.60    | 1.13        | 1.13     | 0.039    | -0.023   | 0.032         | 0.032     | 0.027     | 0.030     |
| -0.20    | -0.60    | 1.11        | 1.11     | 0.037    | -0.032   | 0.039         | 0.039     | 0.027     | 0.023     |
| -0.30    | -0.60    | 1.12        | 1.11     | 0.025    | -0.044   | 0.035         | 0.035     | 0.030     | 0.034     |
| -0.40    | -0.60    | 1.12        | 1.12     | 0.012    | -0.050   | 0.039         | 0.039     | 0.032     | 0.037     |
| -0.50    | -0.60    | 1.10        | 1.09     | -0.010   | -0.045   | 0.060         | 0.060     | 0.044     | 0.049     |
| -0.55    | -0.60    | 1.07        | 1.06     | -0.010   | -0.035   | 0.069         | 0.070     | 0.049     | 0.052     |
| -0.60    | -0.60    | 1.03        | 1.02     | -0.022   | -0.027   | 0.076         | 0.077     | 0.059     | 0.055     |
| -0.65    | -0.60    | 1.01        | 1.01     | -0.025   | -0.010   | 0.077         | 0.079     | 0.064     | 0.055     |
| -0.70    | -0.60    | 0.99        | 0.98     | -0.025   | 0.010    | 0.072         | 0.072     | 0.055     | 0.052     |
| -0.75    | -0.60    | 0.98        | 0.97     | -0.029   | 0.040    | 0.065         | 0.065     | 0.057     | 0.052     |
| -0.80    | -0.60    | 0.96        | 0.96     | -0.027   | 0.081    | 0.069         | 0.067     | 0.059     | 0.059     |
| -0.80    | -0.70    | 1.05        | 1.05     | -0.030   | 0.065    | 0.059         | 0.059     | 0.049     | 0.052     |
| -0.75    | -0.70    | 1.04        | 1.04     | -0.032   | 0.030    | 0.062         | 0.062     | 0.044     | 0.047     |
| -0.70    | -0.70    | 1.06        | 1.05     | -0.032   | 0.007    | 0.064         | 0.064     | 0.047     | 0.042     |
| -0.65    | -0.70    | 1.08        | 1.08     | -0.025   | 0.005    | 0.054         | 0.054     | 0.040     | 0.042     |
| -0.60    | -0.70    | 1.10        | 1.10     | -0.017   | -0.017   | 0.047         | 0.047     | 0.027     | 0.039     |
| -0.55    | -0.70    | 1.12        | 1.11     | -0.017   | -0.029   | 0.042         | 0.042     | 0.034     | 0.039     |
| -0.50    | -0.70    | 1.12        | 1.11     | -0.002   | -0.032   | 0.042         | 0.042     | 0.039     | 0.035     |
| -0.40    | -0.70    | 1.11        | 1.11     | 0.010    | -0.039   | 0.040         | 0.040     | 0.032     | 0.029     |
| -0.30    | -0.70    | 1.11        | 1.11     | 0.022    | -0.034   | 0.039         | 0.039     | 0.030     | 0.027     |
| -0.20    | -0.70    | 1.11        | 1.10     | 0.029    | -0.034   | 0.039         | 0.039     | 0.030     | 0.027     |
| -0.10    | -0.70    | 1.10        | 1.10     | 0.035    | -0.029   | 0.035         | 0.035     | 0.030     | 0.025     |
| 0.00     | -0.70    | 1.10        | 1.10     | 0.030    | -0.023   | 0.037         | 0.037     | 0.030     | 0.027     |
| 0.10     | -0.70    | 1.10        | 1.09     | 0.032    | -0.017   | 0.042         | 0.042     | 0.029     | 0.020     |
| 0.20     | -0.70    | 1.10        | 1.10     | 0.032    | -0.013   | 0.037         | 0.037     | 0.030     | 0.025     |
| 0.30     | -0.70    | 1.10        | 1.10     | 0.035    | -0.015   | 0.045         | 0.045     | 0.034     | 0.025     |
| 0.40     | -0.70    | 1.09        | 1.09     | 0.070    | -0.008   | 0.045         | 0.045     | 0.034     | 0.030     |
| 0.50     | -0.70    | 1.09        | 1.09     | 0.029    | -0.010   | 0.040         | 0.040     | 0.034     | 0.027     |
| 0.60     | -0.70    | 1.08        | 1.08     | 0.030    | -0.010   | 0.054         | 0.054     | 0.047     | 0.030     |
| 0.70     | -0.70    | 1.08        | 1.08     | 0.072    | -0.008   | 0.057         | 0.057     | 0.057     | 0.057     |
| 0.80     | -0.70    | 1.06        | 1.06     | 0.019    | -0.005   | 0.056         | 0.056     | 0.056     | 0.044     |
| 0.80     | -0.80    | 1.06        | 1.06     | 0.072    | -0.022   | 0.064         | 0.064     | 0.066     | 0.044     |
| 0.70     | -0.80    | 1.09        | 1.08     | 0.019    | -0.008   | 0.054         | 0.052     | 0.087     | 0.075     |
| 0.60     | -0.80    | 1.10        | 1.10     | 0.019    | -0.013   | 0.049         | 0.049     | 0.072     | 0.050     |
| 0.50     | -0.80    | 1.10        | 1.10     | 0.020    | -0.012   | 0.047         | 0.047     | 0.039     | 0.032     |
| 0.40     | -0.80    | 1.11        | 1.11     | 0.020    | -0.010   | 0.042         | 0.042     | 0.047     | 0.032     |
| 0.30     | -0.80    | 1.11        | 1.11     | 0.020    | -0.010   | 0.044         | 0.044     | 0.047     | 0.030     |
| 0.20     | -0.80    | 1.11        | 1.11     | 0.017    | -0.012   | 0.042         | 0.042     | 0.039     | 0.032     |
| 0.10     | -0.80    | 1.11        | 1.11     | 0.017    | -0.019   | 0.044         | 0.044     | 0.042     | 0.032     |
| 0.00     | -0.80    | 1.10        | 1.09     | 0.013    | -0.024   | 0.049         | 0.049     | 0.039     | 0.039     |
| -0.10    | -0.80    | 1.10        | 1.10     | 0.007    | -0.027   | 0.050         | 0.050     | 0.047     | 0.042     |
| -0.20    | -0.80    | 1.10        | 1.09     | 0.000    | -0.034   | 0.056         | 0.056     | 0.049     | 0.047     |
| -0.30    | -0.80    | 1.10        | 1.10     | -0.015   | -0.032   | 0.057         | 0.059     | 0.057     | 0.052     |
| -0.40    | -0.80    | 1.10        | 1.10     | -0.022   | -0.027   | 0.054         | 0.056     | 0.056     | 0.047     |
| -0.50    | -0.80    | 1.10        | 1.10     | -0.039   | -0.022   | 0.057         | 0.059     | 0.061     | 0.049     |
| -0.55    | -0.80    | 1.10        | 1.09     | -0.047   | -0.015   | 0.064         | 0.064     | 0.064     | 0.054     |
| -0.60    | -0.80    | 1.09        | 1.09     | -0.057   | -0.007   | 0.064         | 0.064     | 0.062     | 0.056     |
| -0.65    | -0.80    | 1.09        | 1.08     | -0.056   | -0.003   | 0.061         | 0.061     | 0.059     | 0.054     |
| -0.70    | -0.80    | 1.07        | 1.07     | -0.067   | 0.024    | 0.067         | 0.067     | 0.066     | 0.054     |
| -0.75    | -0.80    | 1.05        | 1.04     | -0.072   | 0.042    | 0.069         | 0.069     | 0.069     | 0.057     |
| -0.80    | -0.80    | 1.02        | 1.01     | -0.072   | 0.082    | 0.071         | 0.072     | 0.069     | 0.062     |

| <i>y</i> | <i>z</i> | Urms | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'$ rms | $u'$  | $v'$  | $w'$  |
|----------|----------|------|-----------|-----------|-----------|----------|-------|-------|-------|
| -0.80    | -0.85    | 1.05 | 1.04      | -0.118    | 0.079     | 0.081    | 0.083 | 0.076 | 0.062 |
| -0.75    | -0.85    | 1.05 | 1.04      | -0.118    | 0.051     | 0.084    | 0.084 | 0.081 | 0.064 |
| -0.70    | -0.85    | 1.06 | 1.04      | -0.111    | 0.027     | 0.076    | 0.076 | 0.084 | 0.059 |
| -0.65    | -0.85    | 1.08 | 1.07      | -0.111    | 0.005     | 0.076    | 0.076 | 0.084 | 0.066 |
| -0.60    | -0.85    | 1.08 | 1.08      | -0.091    | -0.007    | 0.074    | 0.072 | 0.079 | 0.062 |
| -0.55    | -0.85    | 1.08 | 1.07      | -0.093    | -0.005    | 0.078    | 0.078 | 0.069 | 0.067 |
| -0.50    | -0.85    | 1.07 | 1.08      | -0.076    | -0.024    | 0.074    | 0.072 | 0.083 | 0.059 |
| -0.40    | -0.85    | 1.07 | 1.07      | -0.069    | -0.017    | 0.071    | 0.072 | 0.076 | 0.061 |
| -0.30    | -0.85    | 1.08 | 1.08      | -0.061    | -0.020    | 0.067    | 0.067 | 0.067 | 0.061 |
| -0.20    | -0.85    | 1.08 | 1.08      | -0.042    | -0.024    | 0.059    | 0.061 | 0.071 | 0.052 |
| -0.10    | -0.85    | 1.09 | 1.09      | -0.029    | -0.022    | 0.066    | 0.066 | 0.061 | 0.056 |
| 0.00     | -0.85    | 1.09 | 1.08      | -0.015    | -0.015    | 0.051    | 0.051 | 0.054 | 0.046 |
| 0.10     | -0.85    | 1.09 | 1.09      | -0.005    | -0.017    | 0.052    | 0.052 | 0.042 |       |
| 0.20     | -0.85    | 1.08 | 1.08      | -0.003    | -0.008    | 0.054    | 0.054 | 0.054 | 0.040 |
| 0.30     | -0.85    | 1.07 | 1.07      | 0.003     | -0.010    | 0.052    | 0.052 | 0.051 | 0.035 |
| 0.40     | -0.85    | 1.08 | 1.08      | 0.015     | -0.008    | 0.047    | 0.047 | 0.042 | 0.034 |
| 0.50     | -0.85    | 1.08 | 1.08      | 0.015     | -0.005    | 0.051    | 0.052 | 0.044 | 0.034 |
| 0.60     | -0.85    | 1.08 | 1.08      | 0.024     | -0.019    | 0.046    | 0.046 | 0.061 | 0.039 |
| 0.70     | -0.85    | 1.07 | 1.07      | 0.032     | -0.013    | 0.057    | 0.056 | 0.069 | 0.039 |
| 0.80     | -0.85    | 1.05 | 1.04      | 0.015     | -0.019    | 0.064    | 0.064 | 0.078 | 0.051 |
| -0.80    | -0.70    | 1.01 | 1.01      | -0.153    | 0.063     | 0.073    | 0.075 | 0.010 | 0.059 |
| -0.75    | -0.70    | 1.01 | 0.99      | -0.161    | 0.042     | 0.086    | 0.086 | 0.088 | 0.073 |
| -0.70    | -0.70    | 1.02 | 1.00      | -0.151    | 0.027     | 0.105    | 0.103 | 0.088 | 0.070 |
| -0.65    | -0.70    | 1.04 | 1.02      | -0.155    | 0.012     | 0.090    | 0.090 | 0.080 | 0.068 |
| -0.60    | -0.70    | 1.04 | 1.02      | -0.153    | -0.002    | 0.083    | 0.081 | 0.077 | 0.065 |
| -0.55    | -0.70    | 1.01 | 0.97      | -0.155    | -0.012    | 0.070    | 0.088 | 0.088 | 0.060 |
| -0.50    | -0.70    | 1.07 | 1.06      | -0.143    | -0.022    | 0.100    | 0.100 | 0.081 | 0.060 |
| 0.40     | -0.70    | 1.08 | 1.07      | -0.138    | -0.017    | 0.088    | 0.088 | 0.081 | 0.058 |
| 0.30     | -0.70    | 1.03 | 1.07      | -0.116    | -0.023    | 0.081    | 0.080 | 0.075 | 0.063 |
| 0.20     | -0.70    | 1.08 | 1.07      | -0.091    | -0.023    | 0.083    | 0.085 | 0.067 | 0.060 |
| -0.10    | -0.70    | 1.07 | 1.07      | -0.085    | -0.012    | 0.060    | 0.060 | 0.060 | 0.050 |
| 0.00     | -0.70    | 1.06 | 1.06      | -0.067    | -0.013    | 0.070    | 0.072 | 0.068 | 0.050 |
| 0.10     | -0.70    | 1.07 | 1.07      | -0.058    | -0.015    | 0.067    | 0.068 | 0.068 | 0.047 |
| 0.20     | -0.70    | 1.05 | 1.04      | -0.037    | -0.013    | 0.073    | 0.073 | 0.063 | 0.043 |
| 0.30     | -0.70    | 1.06 | 1.06      | -0.025    | -0.010    | 0.063    | 0.063 | 0.055 | 0.045 |
| 0.40     | -0.70    | 1.06 | 1.06      | -0.020    | -0.005    | 0.064    | 0.065 | 0.057 | 0.041 |
| 0.50     | -0.70    | 1.07 | 1.07      | -0.020    | -0.013    | 0.073    | 0.073 | 0.062 | 0.040 |
| 0.60     | -0.70    | 1.06 | 1.06      | -0.017    | -0.015    | 0.072    | 0.072 | 0.040 | 0.035 |
| 0.70     | -0.70    | 1.06 | 1.06      | -0.022    | -0.010    | 0.062    | 0.062 | 0.057 | 0.042 |
| 0.80     | -0.70    | 1.03 | 1.03      | 0.008     | -0.013    | 0.065    | 0.065 | 0.057 | 0.028 |
| -0.80    | -0.75    | 0.91 | 0.89      | -0.168    | 0.057     | 0.095    | 0.096 | 0.088 | 0.070 |
| -0.75    | -0.75    | 0.97 | 0.91      | -0.167    | 0.028     | 0.080    | 0.080 | 0.078 | 0.054 |
| -0.70    | -0.75    | 0.97 | 0.95      | -0.196    | 0.013     | 0.096    | 0.096 | 0.082 | 0.059 |
| -0.65    | -0.75    | 0.98 | 0.96      | -0.193    | 0.003     | 0.098    | 0.096 | 0.072 | 0.062 |
| -0.60    | -0.75    | 0.97 | 0.95      | -0.183    | -0.010    | 0.078    | 0.078 | 0.080 | 0.060 |
| -0.55    | -0.75    | 0.97 | 0.95      | -0.186    | -0.008    | 0.083    | 0.085 | 0.080 | 0.059 |
| -0.50    | -0.75    | 0.99 | 0.97      | -0.185    | -0.011    | 0.083    | 0.083 | 0.088 | 0.057 |
| -0.40    | -0.75    | 1.07 | 1.00      | -0.170    | -0.016    | 0.080    | 0.080 | 0.082 | 0.049 |
| -0.30    | -0.75    | 1.01 | 1.00      | -0.114    | -0.016    | 0.080    | 0.082 | 0.095 | 0.056 |
| -0.20    | -0.75    | 1.01 | 1.00      | -0.134    | -0.023    | 0.072    | 0.074 | 0.075 | 0.057 |
| -0.10    | -0.75    | 1.01 | 1.00      | -0.114    | -0.018    | 0.083    | 0.083 | 0.074 | 0.051 |
| 0.00     | -0.75    | 1.00 | 0.97      | -0.085    | -0.013    | 0.080    | 0.082 | 0.064 | 0.044 |
| 0.10     | -0.75    | 0.98 | 0.98      | -0.078    | -0.010    | 0.082    | 0.083 | 0.064 | 0.047 |
| 0.20     | -0.75    | 1.01 | 1.00      | -0.074    | -0.017    | 0.082    | 0.080 | 0.069 | 0.044 |
| 0.30     | -0.75    | 0.99 | 0.98      | -0.047    | -0.007    | 0.070    | 0.070 | 0.060 | 0.047 |
| 0.40     | -0.75    | 1.07 | 1.03      | -0.078    | -0.002    | 0.077    | 0.077 | 0.057 | 0.042 |
| 0.50     | -0.75    | 1.07 | 1.07      | -0.042    | -0.005    | 0.080    | 0.080 | 0.056 | 0.036 |
| 0.55     | -0.75    | 1.00 | 1.00      | -0.042    | -0.010    | 0.067    | 0.067 | 0.064 | 0.030 |
| 0.60     | -0.75    | 1.00 | 1.00      | 0.020     | -0.011    | 0.069    | 0.069 | 0.042 | 0.039 |
| 0.65     | -0.75    | 1.00 | 1.00      | 0.011     | -0.010    | 0.057    | 0.057 | 0.052 | 0.038 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.70     | -0.93    | 1.00            | 0.99      | 0.008     | -0.008    | 0.082            | 0.082 | 0.051 | 0.037 |
| 0.80     | -0.93    | 1.00            | 1.00      | 0.003     | -0.013    | 0.082            | 0.082 | 0.059 | 0.036 |
| -0.80    | -0.95    | 0.93            | 0.90      | -0.187    | 0.042     | 0.115            | 0.117 | 0.099 | 0.066 |
| -0.75    | -0.95    | 0.94            | 0.90      | -0.222    | 0.024     | 0.106            | 0.106 | 0.091 | 0.063 |
| -0.70    | -0.95    | 0.95            | 0.92      | -0.213    | 0.019     | 0.098            | 0.098 | 0.098 | 0.065 |
| -0.65    | -0.95    | 0.98            | 0.95      | -0.227    | 0.005     | 0.119            | 0.117 | 0.098 | 0.066 |
| -0.60    | -0.95    | 1.00            | 0.97      | -0.222    | -0.007    | 0.106            | 0.110 | 0.091 | 0.068 |
| -0.55    | -0.95    | 1.02            | 0.98      | -0.234    | -0.005    | 0.108            | 0.112 | 0.089 | 0.056 |
| -0.50    | -0.95    | 1.00            | 0.98      | -0.206    | -0.005    | 0.098            | 0.098 | 0.084 | 0.063 |
| -0.40    | -0.95    | 1.02            | 0.99      | -0.218    | -0.016    | 0.093            | 0.093 | 0.080 | 0.063 |
| -0.30    | -0.95    | 1.03            | 1.01      | -0.176    | -0.012    | 0.099            | 0.103 | 0.091 | 0.061 |
| -0.20    | -0.95    | 1.02            | 1.00      | -0.173    | -0.017    | 0.101            | 0.101 | 0.079 | 0.058 |
| -0.10    | -0.95    | 1.03            | 1.02      | -0.131    | -0.019    | 0.098            | 0.098 | 0.079 | 0.056 |
| 0.00     | -0.95    | 1.03            | 1.02      | -0.105    | -0.023    | 0.093            | 0.093 | 0.075 | 0.054 |
| 0.10     | -0.95    | 1.04            | 1.03      | -0.105    | -0.014    | 0.112            | 0.113 | 0.082 | 0.054 |
| 0.20     | -0.95    | 1.02            | 1.01      | -0.091    | -0.016    | 0.112            | 0.112 | 0.077 | 0.054 |
| 0.30     | -0.95    | 1.01            | 1.01      | -0.082    | -0.003    | 0.089            | 0.091 | 0.066 | 0.049 |
| 0.40     | -0.95    | 1.02            | 1.02      | -0.073    | -0.012    | 0.084            | 0.084 | 0.066 | 0.061 |
| 0.50     | -0.95    | 1.02            | 1.02      | -0.070    | -0.010    | 0.098            | 0.098 | 0.072 | 0.047 |
| 0.60     | -0.95    | 1.02            | 1.02      | 0.014     | -0.009    | 0.079            | 0.079 | 0.049 | 0.042 |
| 0.70     | -0.95    | 1.03            | 1.02      | 0.007     | -0.010    | 0.075            | 0.075 | 0.065 | 0.040 |
| 0.80     | -0.95    | 1.03            | 1.03      | -0.002    | -0.009    | 0.077            | 0.077 | 0.056 | 0.044 |
| -0.80    | -0.76    | 0.84            | 0.81      | -0.182    | 0.029     | 0.112            | 0.112 | 0.095 | 0.068 |
| -0.75    | -0.96    | 0.84            | 0.81      | -0.188    | 0.014     | 0.105            | 0.103 | 0.090 | 0.063 |
| -0.70    | -0.96    | 0.90            | 0.87      | -0.196    | 0.002     | 0.106            | 0.108 | 0.095 | 0.064 |
| -0.65    | -0.96    | 0.90            | 0.87      | -0.201    | 0.012     | 0.098            | 0.098 | 0.078 | 0.066 |
| -0.60    | -0.96    | 0.92            | 0.89      | -0.213    | -0.010    | 0.101            | 0.100 | 0.088 | 0.059 |
| -0.55    | -0.96    | 0.93            | 0.90      | -0.203    | -0.015    | 0.105            | 0.105 | 0.078 | 0.057 |
| -0.50    | -0.96    | 0.95            | 0.93      | -0.197    | -0.014    | 0.117            | 0.117 | 0.084 | 0.056 |
| -0.40    | -0.96    | 0.95            | 0.92      | -0.196    | -0.014    | 0.090            | 0.093 | 0.076 | 0.056 |
| -0.30    | -0.96    | 0.94            | 0.92      | -0.132    | -0.017    | 0.106            | 0.106 | 0.103 | 0.054 |
| -0.20    | -0.96    | 0.94            | 0.92      | -0.155    | -0.019    | 0.103            | 0.105 | 0.069 | 0.054 |
| -0.10    | -0.96    | 0.95            | 0.93      | -0.125    | -0.017    | 0.101            | 0.101 | 0.079 | 0.061 |
| 0.00     | -0.96    | 0.95            | 0.95      | -0.098    | -0.012    | 0.098            | 0.098 | 0.074 | 0.052 |
| 0.10     | -0.96    | 0.94            | 0.93      | -0.108    | -0.008    | 0.105            | 0.105 | 0.081 | 0.052 |
| 0.20     | -0.96    | 0.92            | 0.91      | -0.100    | -0.008    | 0.101            | 0.101 | 0.074 | 0.047 |
| 0.30     | -0.96    | 0.97            | 0.93      | -0.061    | -0.012    | 0.095            | 0.095 | 0.063 | 0.047 |
| 0.40     | -0.96    | 0.94            | 0.94      | -0.054    | -0.008    | 0.096            | 0.098 | 0.059 | 0.049 |
| 0.50     | -0.96    | 0.96            | 0.96      | -0.076    | -0.008    | 0.091            | 0.093 | 0.066 | 0.047 |
| 0.60     | -0.96    | 0.96            | 0.94      | 0.008     | -0.014    | 0.086            | 0.086 | 0.049 | 0.046 |
| 0.70     | -0.96    | 0.96            | 0.96      | 0.005     | -0.017    | 0.084            | 0.084 | 0.059 | 0.041 |
| 0.80     | -0.96    | 0.52            | 0.36      | 0.030     | -0.007    | 0.326            | 0.406 | 0.057 | 0.308 |
| 0.70     | 0.00     | 1.08            | 1.08      | 0.015     | 0.012     | 0.059            | 0.059 | 0.050 | 0.040 |
| 0.60     | 0.00     | 1.10            | 1.10      | 0.015     | 0.012     | 0.045            | 0.045 | 0.040 | 0.030 |
| 0.50     | 0.00     | 1.10            | 1.10      | 0.023     | 0.013     | 0.044            | 0.044 | 0.034 | 0.029 |
| 0.40     | 0.00     | 1.09            | 1.08      | 0.027     | 0.015     | 0.042            | 0.042 | 0.030 | 0.018 |
| 0.30     | 0.00     | 1.09            | 1.09      | 0.030     | 0.015     | 0.040            | 0.039 | 0.030 | 0.023 |
| 0.20     | 0.00     | 1.10            | 1.10      | 0.037     | 0.017     | 0.042            | 0.042 | 0.032 | 0.022 |
| 0.10     | 0.00     | 1.10            | 1.10      | 0.050     | 0.018     | 0.059            | 0.059 | 0.030 | 0.018 |
| 0.00     | 0.00     | 1.10            | 1.10      | 0.057     | 0.020     | 0.044            | 0.044 | 0.030 | 0.020 |
| -0.10    | 0.00     | 1.11            | 1.10      | 0.072     | 0.025     | 0.052            | 0.052 | 0.042 | 0.025 |
| -0.20    | 0.00     | 1.07            | 1.06      | 0.081     | 0.029     | 0.089            | 0.091 | 0.070 | 0.055 |
| -0.30    | 0.00     | 0.83            | 0.81      | 0.074     | 0.025     | 0.148            | 0.151 | 0.107 | 0.091 |
| -0.40    | 0.00     | 0.58            | 0.55      | 0.069     | 0.035     | 0.106            | 0.106 | 0.106 | 0.084 |
| -0.50    | 0.00     | 0.51            | 0.48      | 0.096     | 0.070     | 0.096            | 0.099 | 0.094 | 0.082 |
| -0.55    | 0.00     | 0.51            | 0.47      | 0.128     | 0.077     | 0.101            | 0.102 | 0.112 | 0.089 |
| -0.60    | 0.00     | 0.57            | 0.52      | 0.146     | 0.040     | 0.117            | 0.123 | 0.131 | 0.107 |
| -0.65    | 0.00     | 0.62            | 0.57      | 0.154     | 0.022     | 0.128            | 0.129 | 0.126 | 0.123 |
| -0.70    | 0.00     | 0.68            | 0.62      | 0.193     | -0.035    | 0.144            | 0.149 | 0.128 | 0.123 |
| -0.75    | 0.00     | 0.73            | 0.67      | 0.195     | -0.092    | 0.126            | 0.128 | 0.123 | 0.117 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80    | 0.00     | 0.75            | 0.69      | 0.178     | -0.131    | 0.134      | 0.134 | 0.109 | 0.144 |
| -0.80    | 0.10     | 0.90            | 0.87      | 0.112     | -0.168    | 0.091      | 0.089 | 0.081 | 0.084 |
| -0.75    | 0.10     | 0.86            | 0.83      | 0.104     | -0.111    | 0.111      | 0.112 | 0.106 | 0.101 |
| -0.70    | 0.10     | 0.80            | 0.77      | 0.097     | -0.067    | 0.123      | 0.123 | 0.109 | 0.106 |
| -0.65    | 0.10     | 0.71            | 0.68      | 0.092     | -0.005    | 0.129      | 0.131 | 0.111 | 0.106 |
| -0.60    | 0.10     | 0.64            | 0.61      | 0.101     | 0.045     | 0.123      | 0.124 | 0.119 | 0.101 |
| -0.55    | 0.10     | 0.59            | 0.56      | 0.081     | 0.081     | 0.116      | 0.121 | 0.106 | 0.099 |
| -0.50    | 0.10     | 0.56            | 0.53      | 0.086     | 0.086     | 0.107      | 0.112 | 0.106 | 0.092 |
| -0.40    | 0.10     | 0.60            | 0.58      | 0.064     | 0.069     | 0.117      | 0.119 | 0.101 | 0.082 |
| -0.30    | 0.10     | 0.85            | 0.83      | 0.070     | 0.050     | 0.148      | 0.148 | 0.106 | 0.092 |
| -0.20    | 0.10     | 1.06            | 1.05      | 0.076     | 0.049     | 0.072      | 0.074 | 0.067 | 0.057 |
| -0.10    | 0.10     | 1.10            | 1.10      | 0.062     | 0.037     | 0.049      | 0.049 | 0.039 | 0.022 |
| 0.00     | 0.10     | 1.11            | 1.10      | 0.052     | 0.030     | 0.044      | 0.044 | 0.029 | 0.020 |
| 0.10     | 0.10     | 1.12            | 1.12      | 0.042     | 0.027     | 0.042      | 0.042 | 0.029 | 0.025 |
| 0.20     | 0.10     | 1.10            | 1.10      | 0.035     | 0.020     | 0.039      | 0.039 | 0.029 | 0.018 |
| 0.30     | 0.10     | 1.09            | 1.09      | 0.029     | 0.017     | 0.044      | 0.044 | 0.030 | 0.023 |
| 0.40     | 0.10     | 1.08            | 1.08      | 0.023     | 0.015     | 0.042      | 0.042 | 0.034 | 0.020 |
| 0.50     | 0.10     | 1.09            | 1.09      | 0.018     | 0.012     | 0.044      | 0.044 | 0.037 | 0.027 |
| 0.60     | 0.10     | 1.08            | 1.08      | 0.015     | 0.010     | 0.045      | 0.045 | 0.042 | 0.030 |
| 0.70     | 0.10     | 1.07            | 1.07      | 0.013     | 0.008     | 0.055      | 0.055 | 0.052 | 0.035 |
| 0.80     | 0.10     | 1.05            | 1.05      | 0.010     | 0.007     | 0.064      | 0.064 | 0.065 | 0.040 |
| 0.80     | 0.20     | 1.06            | 1.06      | 0.017     | 0.012     | 0.060      | 0.060 | 0.062 | 0.044 |
| 0.70     | 0.20     | 1.08            | 1.08      | 0.010     | 0.012     | 0.060      | 0.059 | 0.052 | 0.040 |
| 0.60     | 0.20     | 1.09            | 1.09      | 0.018     | 0.013     | 0.052      | 0.052 | 0.037 | 0.030 |
| 0.50     | 0.20     | 1.08            | 1.08      | 0.023     | 0.017     | 0.045      | 0.045 | 0.034 | 0.023 |
| 0.40     | 0.20     | 1.10            | 1.10      | 0.023     | 0.015     | 0.045      | 0.045 | 0.032 | 0.020 |
| 0.30     | 0.20     | 1.09            | 1.09      | 0.029     | 0.020     | 0.039      | 0.039 | 0.030 | 0.018 |
| 0.20     | 0.20     | 1.09            | 1.09      | 0.034     | 0.023     | 0.044      | 0.044 | 0.030 | 0.018 |
| 0.10     | 0.20     | 1.10            | 1.09      | 0.040     | 0.030     | 0.037      | 0.039 | 0.030 | 0.020 |
| 0.00     | 0.20     | 1.11            | 1.11      | 0.045     | 0.037     | 0.042      | 0.044 | 0.034 | 0.023 |
| -0.10    | 0.20     | 1.10            | 1.10      | 0.054     | 0.052     | 0.047      | 0.047 | 0.039 | 0.025 |
| -0.20    | 0.20     | 1.08            | 1.08      | 0.055     | 0.064     | 0.070      | 0.070 | 0.055 | 0.047 |
| -0.30    | 0.20     | 0.91            | 0.89      | 0.049     | 0.082     | 0.139      | 0.141 | 0.101 | 0.087 |
| -0.40    | 0.70     | 0.68            | 0.65      | 0.039     | 0.094     | 0.116      | 0.117 | 0.114 | 0.082 |
| -0.50    | 0.20     | 0.64            | 0.62      | 0.037     | 0.097     | 0.107      | 0.114 | 0.107 | 0.087 |
| -0.55    | 0.20     | 0.67            | 0.65      | 0.037     | 0.075     | 0.117      | 0.122 | 0.101 | 0.091 |
| -0.60    | 0.20     | 0.71            | 0.70      | 0.037     | 0.045     | 0.119      | 0.121 | 0.101 | 0.091 |
| -0.65    | 0.20     | 0.78            | 0.76      | 0.039     | -0.010    | 0.099      | 0.101 | 0.096 | 0.086 |
| -0.70    | 0.20     | 0.82            | 0.81      | 0.035     | -0.070    | 0.080      | 0.082 | 0.086 | 0.079 |
| -0.75    | 0.20     | 0.84            | 0.82      | 0.032     | -0.119    | 0.084      | 0.084 | 0.075 | 0.080 |
| -0.80    | 0.20     | 0.88            | 0.85      | 0.018     | -0.193    | 0.082      | 0.084 | 0.072 | 0.070 |
| -0.80    | 0.30     | 0.85            | 0.83      | -0.037    | -0.154    | 0.079      | 0.077 | 0.075 | 0.057 |
| -0.75    | 0.30     | 0.80            | 0.79      | -0.045    | -0.106    | 0.075      | 0.075 | 0.070 | 0.064 |
| -0.70    | 0.30     | 0.79            | 0.78      | -0.040    | -0.064    | 0.074      | 0.074 | 0.065 | 0.075 |
| -0.65    | 0.30     | 0.77            | 0.76      | -0.035    | -0.017    | 0.077      | 0.079 | 0.082 | 0.077 |
| -0.60    | 0.30     | 0.74            | 0.73      | -0.035    | 0.045     | 0.097      | 0.101 | 0.091 | 0.080 |
| -0.55    | 0.30     | 0.72            | 0.71      | -0.023    | 0.075     | 0.102      | 0.106 | 0.099 | 0.077 |
| -0.50    | 0.30     | 0.72            | 0.70      | -0.007    | 0.091     | 0.097      | 0.099 | 0.107 | 0.077 |
| -0.40    | 0.30     | 0.84            | 0.83      | 0.007     | 0.104     | 0.130      | 0.134 | 0.100 | 0.087 |
| -0.30    | 0.30     | 1.02            | 1.00      | 0.033     | 0.092     | 0.109      | 0.112 | 0.087 | 0.075 |
| -0.20    | 0.30     | 1.10            | 1.10      | 0.037     | 0.077     | 0.057      | 0.057 | 0.043 | 0.032 |
| -0.10    | 0.30     | 1.10            | 1.10      | 0.038     | 0.055     | 0.047      | 0.047 | 0.032 | 0.022 |
| 0.00     | 0.30     | 1.10            | 1.10      | 0.038     | 0.043     | 0.045      | 0.045 | 0.032 | 0.023 |
| 0.10     | 0.30     | 1.09            | 1.09      | 0.033     | 0.032     | 0.042      | 0.042 | 0.030 | 0.022 |
| 0.20     | 0.30     | 1.10            | 1.09      | 0.033     | 0.025     | 0.045      | 0.045 | 0.030 | 0.022 |
| 0.30     | 0.30     | 1.10            | 1.10      | 0.027     | 0.023     | 0.040      | 0.040 | 0.032 | 0.020 |
| 0.40     | 0.30     | 1.08            | 1.08      | 0.020     | 0.020     | 0.043      | 0.043 | 0.032 | 0.022 |
| 0.50     | 0.30     | 1.09            | 1.09      | 0.015     | 0.018     | 0.043      | 0.043 | 0.032 | 0.023 |
| 0.60     | 0.30     | 1.08            | 1.08      | 0.018     | 0.017     | 0.043      | 0.043 | 0.038 | 0.028 |
| 0.70     | 0.30     | 1.06            | 1.06      | 0.012     | 0.012     | 0.054      | 0.054 | 0.047 | 0.033 |

ORIGINAL PAGE IS  
OF POOR QUALITY

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.80  | 0.30 | 1.05            | 1.05      | 0.010     | 0.008     | 0.054            | 0.054 | 0.054 | 0.042 |
| 0.80  | 0.40 | 1.05            | 1.05      | 0.008     | 0.007     | 0.060            | 0.060 | 0.052 | 0.038 |
| 0.70  | 0.40 | 1.08            | 1.08      | 0.013     | 0.013     | 0.054            | 0.054 | 0.048 | 0.033 |
| 0.60  | 0.40 | 1.09            | 1.08      | 0.012     | 0.017     | 0.050            | 0.050 | 0.042 | 0.027 |
| 0.50  | 0.40 | 1.10            | 1.10      | 0.018     | 0.025     | 0.040            | 0.040 | 0.038 | 0.023 |
| 0.40  | 0.40 | 1.11            | 1.11      | 0.018     | 0.023     | 0.043            | 0.043 | 0.037 | 0.022 |
| 0.30  | 0.40 | 1.07            | 1.07      | 0.027     | 0.025     | 0.038            | 0.038 | 0.028 | 0.020 |
| 0.20  | 0.40 | 1.11            | 1.11      | 0.028     | 0.032     | 0.040            | 0.040 | 0.027 | 0.018 |
| 0.10  | 0.40 | 1.10            | 1.09      | 0.025     | 0.037     | 0.038            | 0.038 | 0.035 | 0.018 |
| 0.00  | 0.40 | 1.10            | 1.10      | 0.027     | 0.045     | 0.040            | 0.040 | 0.030 | 0.020 |
| -0.10 | 0.40 | 1.10            | 1.10      | 0.027     | 0.054     | 0.042            | 0.042 | 0.032 | 0.023 |
| -0.20 | 0.40 | 1.12            | 1.12      | 0.025     | 0.069     | 0.043            | 0.043 | 0.037 | 0.028 |
| -0.30 | 0.40 | 1.10            | 1.09      | 0.010     | 0.082     | 0.057            | 0.057 | 0.054 | 0.052 |
| -0.40 | 0.40 | 1.03            | 1.02      | -0.017    | 0.094     | 0.102            | 0.105 | 0.077 | 0.074 |
| -0.50 | 0.40 | 0.87            | 0.85      | -0.055    | 0.074     | 0.114            | 0.117 | 0.092 | 0.095 |
| -0.55 | 0.40 | 0.84            | 0.83      | -0.067    | 0.047     | 0.10%            | 0.107 | 0.095 | 0.082 |
| -0.60 | 0.40 | 0.83            | 0.81      | -0.075    | 0.028     | 0.099            | 0.100 | 0.097 | 0.084 |
| -0.65 | 0.40 | 0.81            | 0.80      | -0.091    | 0.003     | 0.093            | 0.093 | 0.089 | 0.073 |
| -0.70 | 0.40 | 0.82            | 0.82      | -0.073    | -0.031    | 0.088            | 0.088 | 0.088 | 0.068 |
| -0.75 | 0.40 | 0.86            | 0.84      | -0.003    | -0.089    | 0.079            | 0.078 | 0.088 | 0.059 |
| -0.80 | 0.40 | 0.86            | 0.85      | -0.063    | -0.127    | 0.076            | 0.076 | 0.078 | 0.061 |
| -0.80 | 0.50 | 0.94            | 0.97      | -0.045    | -0.086    | 0.076            | 0.076 | 0.074 | 0.059 |
| -0.75 | 0.50 | 0.94            | 0.93      | -0.059    | -0.061    | 0.086            | 0.088 | 0.074 | 0.063 |
| -0.70 | 0.50 | 0.94            | 0.94      | -0.069    | -0.038    | 0.093            | 0.093 | 0.079 | 0.066 |
| -0.65 | 0.50 | 0.97            | 0.96      | -0.069    | -0.012    | 0.093            | 0.094 | 0.083 | 0.073 |
| -0.60 | 0.50 | 0.97            | 0.98      | -0.074    | 0.020     | 0.096            | 0.097 | 0.074 | 0.071 |
| -0.55 | 0.50 | 1.01            | 1.01      | -0.055    | 0.036     | 0.097            | 0.099 | 0.064 | 0.069 |
| -0.50 | 0.50 | 1.04            | 1.03      | -0.053    | 0.055     | 0.086            | 0.089 | 0.059 | 0.069 |
| -0.40 | 0.50 | 1.07            | 1.08      | -0.028    | 0.069     | 0.056            | 0.058 | 0.038 | 0.046 |
| -0.30 | 0.50 | 1.08            | 1.07      | 0.002     | 0.063     | 0.050            | 0.050 | 0.035 | 0.030 |
| -0.20 | 0.50 | 1.08            | 1.08      | 0.015     | 0.055     | 0.041            | 0.041 | 0.030 | 0.020 |
| -0.10 | 0.50 | 1.08            | 1.07      | 0.021     | 0.046     | 0.046            | 0.046 | 0.026 | 0.018 |
| 0.00  | 0.50 | 1.05            | 1.05      | 0.023     | 0.038     | 0.038            | 0.038 | 0.028 | 0.026 |
| 0.10  | 0.50 | 1.10            | 1.10      | 0.026     | 0.030     | 0.046            | 0.046 | 0.030 | 0.020 |
| 0.20  | 0.50 | 1.08            | 1.08      | 0.028     | 0.030     | 0.041            | 0.041 | 0.028 | 0.023 |
| 0.30  | 0.50 | 1.08            | 1.08      | 0.023     | 0.026     | 0.045            | 0.045 | 0.030 | 0.020 |
| 0.40  | 0.50 | 1.08            | 1.08      | 0.023     | 0.028     | 0.055            | 0.055 | 0.041 | 0.023 |
| 0.50  | 0.50 | 1.07            | 1.07      | 0.013     | 0.021     | 0.050            | 0.050 | 0.036 | 0.025 |
| 0.60  | 0.50 | 1.03            | 1.03      | 0.013     | 0.018     | 0.051            | 0.051 | 0.046 | 0.035 |
| 0.70  | 0.50 | 1.00            | 1.00      | 0.010     | 0.017     | 0.066            | 0.066 | 0.061 | 0.033 |
| 0.80  | 0.50 | 1.00            | 1.00      | 0.005     | 0.020     | 0.068            | 0.068 | 0.059 | 0.043 |
| 0.80  | 0.60 | 1.02            | 1.01      | 0.017     | 0.013     | 0.053            | 0.053 | 0.053 | 0.041 |
| 0.70  | 0.60 | 1.03            | 1.03      | 0.020     | 0.015     | 0.050            | 0.050 | 0.043 | 0.030 |
| 0.60  | 0.60 | 1.02            | 1.02      | 0.020     | 0.021     | 0.048            | 0.048 | 0.045 | 0.026 |
| 0.50  | 0.60 | 1.03            | 1.02      | 0.025     | 0.021     | 0.050            | 0.050 | 0.040 | 0.030 |
| 0.40  | 0.60 | 1.04            | 1.04      | 0.021     | 0.021     | 0.053            | 0.051 | 0.035 | 0.028 |
| 0.30  | 0.60 | 1.04            | 1.04      | 0.021     | 0.021     | 0.053            | 0.053 | 0.041 | 0.030 |
| 0.20  | 0.60 | 1.09            | 1.09      | 0.021     | 0.031     | 0.043            | 0.043 | 0.038 | 0.018 |
| 0.10  | 0.60 | 1.09            | 1.09      | 0.018     | 0.030     | 0.040            | 0.040 | 0.033 | 0.018 |
| 0.00  | 0.60 | 1.09            | 1.09      | 0.018     | 0.035     | 0.040            | 0.040 | 0.041 | 0.020 |
| -0.10 | 0.60 | 1.12            | 1.12      | 0.007     | 0.044     | 0.039            | 0.039 | 0.033 | 0.020 |
| -0.20 | 0.60 | 1.11            | 1.11      | 0.002     | 0.044     | 0.040            | 0.040 | 0.033 | 0.010 |
| -0.30 | 0.60 | 1.11            | 1.11      | -0.012    | 0.050     | 0.042            | 0.042 | 0.028 | 0.022 |
| -0.40 | 0.60 | 1.13            | 1.12      | -0.027    | 0.050     | 0.042            | 0.042 | 0.033 | 0.025 |
| -0.50 | 0.60 | 1.12            | 1.11      | -0.052    | 0.042     | 0.045            | 0.045 | 0.032 | 0.029 |
| -0.55 | 0.60 | 1.10            | 1.09      | -0.054    | 0.030     | 0.049            | 0.049 | 0.037 | 0.025 |
| -0.60 | 0.60 | 1.13            | 1.13      | -0.062    | 0.013     | 0.055            | 0.055 | 0.040 | 0.039 |
| -0.65 | 0.60 | 1.06            | 1.06      | -0.067    | 0.000     | 0.070            | 0.070 | 0.047 | 0.047 |
| -0.70 | 0.60 | 1.06            | 1.06      | -0.060    | -0.028    | 0.074            | 0.074 | 0.050 | 0.049 |
| -0.75 | 0.60 | 1.00            | 1.00      | -0.047    | -0.054    | 0.070            | 0.070 | 0.059 | 0.047 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | 0.60  | 1.00            | 1.00      | -0.035    | -0.087    | 0.069      | 0.069 | 0.059 | 0.050 |
| -0.80 | 0.70  | 1.06            | 1.05      | -0.044    | -0.060    | 0.060      | 0.060 | 0.049 | 0.040 |
| -0.75 | 0.70  | 1.07            | 1.07      | -0.047    | -0.032    | 0.060      | 0.060 | 0.042 | 0.040 |
| -0.70 | 0.70  | 1.11            | 1.10      | -0.067    | -0.010    | 0.057      | 0.057 | 0.044 | 0.035 |
| -0.65 | 0.70  | 1.09            | 1.09      | -0.062    | 0.002     | 0.045      | 0.045 | 0.035 | 0.027 |
| -0.60 | 0.70  | 1.10            | 1.10      | -0.055    | 0.010     | 0.045      | 0.045 | 0.033 | 0.023 |
| -0.55 | 0.70  | 1.12            | 1.12      | -0.049    | 0.015     | 0.045      | 0.045 | 0.035 | 0.028 |
| -0.50 | 0.70  | 1.12            | 1.11      | -0.044    | 0.020     | 0.042      | 0.042 | 0.033 | 0.027 |
| -0.40 | 0.70  | 1.11            | 1.11      | -0.032    | 0.032     | 0.044      | 0.044 | 0.035 | 0.022 |
| -0.30 | 0.70  | 1.09            | 1.09      | -0.020    | 0.030     | 0.044      | 0.044 | 0.032 | 0.022 |
| -0.20 | 0.70  | 1.10            | 1.10      | -0.007    | 0.030     | 0.054      | 0.054 | 0.032 | 0.022 |
| -0.10 | 0.70  | 1.10            | 1.10      | 0.008     | 0.027     | 0.044      | 0.044 | 0.035 | 0.023 |
| 0.00  | 0.70  | 1.06            | 1.06      | 0.015     | 0.023     | 0.045      | 0.045 | 0.032 | 0.022 |
| 0.10  | 0.70  | 1.06            | 1.05      | 0.020     | 0.018     | 0.047      | 0.047 | 0.032 | 0.022 |
| 0.20  | 0.70  | 1.04            | 1.04      | 0.022     | 0.017     | 0.054      | 0.054 | 0.033 | 0.033 |
| 0.30  | 0.70  | 1.06            | 1.05      | 0.022     | 0.022     | 0.050      | 0.050 | 0.030 | 0.023 |
| 0.40  | 0.70  | 1.04            | 1.04      | 0.025     | 0.017     | 0.045      | 0.045 | 0.032 | 0.023 |
| 0.50  | 0.70  | 1.05            | 1.05      | 0.025     | 0.020     | 0.044      | 0.042 | 0.035 | 0.023 |
| 0.60  | 0.70  | 1.05            | 1.04      | 0.022     | 0.018     | 0.055      | 0.055 | 0.037 | 0.030 |
| 0.70  | 0.70  | 1.03            | 1.03      | 0.028     | 0.018     | 0.051      | 0.051 | 0.041 | 0.026 |
| 0.80  | 0.70  | 1.04            | 1.04      | 0.018     | 0.012     | 0.073      | 0.073 | 0.053 | 0.038 |
| 0.80  | 0.80  | 1.03            | 1.03      | 0.023     | 0.015     | 0.056      | 0.056 | 0.050 | 0.031 |
| 0.70  | 0.80  | 1.03            | 1.03      | 0.023     | 0.013     | 0.063      | 0.063 | 0.041 | 0.030 |
| 0.60  | 0.80  | 1.05            | 1.05      | 0.031     | 0.013     | 0.046      | 0.046 | 0.035 | 0.026 |
| 0.50  | 0.80  | 1.03            | 1.03      | 0.020     | 0.013     | 0.056      | 0.056 | 0.036 | 0.036 |
| 0.40  | 0.80  | 1.04            | 1.04      | 0.022     | 0.020     | 0.055      | 0.055 | 0.033 | 0.030 |
| 0.30  | 0.80  | 1.04            | 1.04      | 0.020     | 0.022     | 0.045      | 0.046 | 0.031 | 0.028 |
| 0.20  | 0.80  | 1.04            | 1.04      | 0.005     | 0.022     | 0.053      | 0.053 | 0.040 | 0.025 |
| 0.10  | 0.80  | 1.03            | 1.03      | 0.005     | 0.017     | 0.048      | 0.048 | 0.036 | 0.031 |
| 0.00  | 0.80  | 1.03            | 1.03      | 0.002     | 0.013     | 0.048      | 0.048 | 0.041 | 0.035 |
| -0.10 | 0.80  | 0.95            | 0.95      | -0.012    | 0.013     | 0.200      | 0.200 | 0.035 | 0.058 |
| -0.20 | 0.80  | 1.02            | 1.02      | -0.015    | 0.018     | 0.051      | 0.051 | 0.038 | 0.038 |
| -0.30 | 0.80  | 1.03            | 1.02      | -0.028    | 0.023     | 0.051      | 0.051 | 0.043 | 0.035 |
| -0.40 | 0.80  | 1.07            | 1.07      | -0.038    | 0.020     | 0.050      | 0.050 | 0.043 | 0.041 |
| -0.50 | 0.80  | 1.10            | 1.10      | -0.048    | 0.015     | 0.053      | 0.053 | 0.045 | 0.041 |
| -0.55 | 0.80  | 1.09            | 1.08      | -0.056    | 0.012     | 0.045      | 0.045 | 0.045 | 0.040 |
| -0.60 | 0.80  | 1.09            | 1.09      | -0.055    | 0.008     | 0.053      | 0.053 | 0.045 | 0.043 |
| -0.65 | 0.80  | 1.09            | 1.09      | -0.068    | 0.007     | 0.046      | 0.046 | 0.046 | 0.036 |
| -0.70 | 0.80  | 1.08            | 1.08      | -0.071    | -0.007    | 0.058      | 0.058 | 0.048 | 0.043 |
| -0.75 | 0.80  | 1.06            | 1.05      | -0.074    | -0.036    | 0.060      | 0.060 | 0.050 | 0.050 |
| -0.80 | 0.80  | 1.06            | 1.05      | -0.065    | -0.066    | 0.066      | 0.068 | 0.060 | 0.051 |
| -0.85 | 0.80  | 1.07            | 1.07      | -0.071    | -0.093    | 0.068      | 0.071 | 0.059 | 0.055 |
| -0.85 | 0.70  | 1.04            | 1.03      | -0.073    | -0.111    | 0.061      | 0.061 | 0.053 | 0.055 |
| -0.85 | 0.60  | 1.00            | 0.99      | -0.035    | -0.116    | 0.061      | 0.061 | 0.046 | 0.055 |
| -0.85 | 0.50  | 0.97            | 0.95      | -0.041    | -0.140    | 0.076      | 0.073 | 0.064 | 0.063 |
| -0.85 | 0.40  | 0.92            | 0.90      | -0.031    | -0.172    | 0.081      | 0.079 | 0.071 | 0.068 |
| -0.85 | 0.30  | 0.91            | 0.88      | -0.007    | -0.208    | 0.079      | 0.079 | 0.066 | 0.061 |
| -0.85 | 0.20  | 0.92            | 0.89      | 0.041     | -0.225    | 0.078      | 0.079 | 0.073 | 0.071 |
| -0.85 | 0.10  | 0.89            | 0.84      | 0.099     | -0.218    | 0.091      | 0.089 | 0.079 | 0.097 |
| -0.85 | 0.00  | 0.72            | 0.67      | 0.145     | -0.159    | 0.142      | 0.144 | 0.097 | 0.117 |
| -0.85 | -0.10 | 0.54            | 0.47      | 0.162     | 0.000     | 0.149      | 0.154 | 0.102 | 0.169 |
| -0.85 | -0.20 | 0.70            | 0.65      | 0.119     | 0.116     | 0.132      | 0.140 | 0.088 | 0.131 |
| -0.85 | -0.30 | 0.80            | 0.77      | 0.076     | 0.149     | 0.114      | 0.112 | 0.081 | 0.089 |
| -0.85 | -0.40 | 0.88            | 0.86      | 0.012     | 0.159     | 0.079      | 0.079 | 0.071 | 0.073 |
| -0.85 | -0.50 | 0.93            | 0.91      | -0.036    | 0.149     | 0.076      | 0.074 | 0.066 | 0.061 |
| -0.85 | -0.60 | 0.98            | 0.96      | -0.028    | 0.134     | 0.084      | 0.083 | 0.058 | 0.068 |
| -0.85 | -0.70 | 1.00            | 0.99      | -0.038    | 0.134     | 0.081      | 0.084 | 0.066 | 0.068 |
| -0.85 | -0.80 | 0.99            | 0.98      | -0.073    | 0.109     | 0.071      | 0.074 | 0.068 | 0.066 |
| -0.80 | 0.80  | 1.08            | 1.07      | -0.075    | -0.054    | 0.060      | 0.060 | 0.057 | 0.057 |
| -0.80 | 0.70  | 1.06            | 1.05      | -0.044    | -0.075    | 0.064      | 0.064 | 0.040 | 0.047 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U' rms</u> | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| -0.80    | 0.60     | 1.01        | 1.01     | -0.042   | -0.077   | 0.067         | 0.067     | 0.057     | 0.044     |
| -0.80    | 0.50     | 0.94        | 0.93     | -0.047   | -0.089   | 0.074         | 0.075     | 0.069     | 0.052     |
| -0.80    | 0.40     | 0.88        | 0.87     | -0.059   | -0.116   | 0.077         | 0.077     | 0.075     | 0.070     |
| -0.80    | 0.30     | 0.87        | 0.85     | -0.013   | -0.136   | 0.079         | 0.077     | 0.074     | 0.070     |
| -0.80    | 0.20     | 0.88        | 0.86     | 0.037    | -0.149   | 0.084         | 0.085     | 0.069     | 0.077     |
| -0.80    | 0.10     | 0.87        | 0.84     | 0.107    | -0.154   | 0.119         | 0.119     | 0.090     | 0.090     |
| -0.80    | 0.00     | 0.71        | 0.65     | 0.167    | -0.112   | 0.152         | 0.156     | 0.105     | 0.141     |
| -0.80    | -0.10    | 0.56        | 0.48     | 0.211    | -0.025   | 0.147         | 0.151     | 0.107     | 0.164     |
| -0.80    | -0.20    | 0.67        | 0.63     | 0.121    | 0.080    | 0.146         | 0.144     | 0.119     | 0.111     |
| -0.80    | -0.30    | 0.77        | 0.76     | 0.062    | 0.077    | 0.116         | 0.117     | 0.087     | 0.072     |
| -0.80    | -0.40    | 0.85        | 0.84     | -0.005   | 0.085    | 0.087         | 0.085     | 0.072     | 0.067     |
| -0.80    | -0.50    | 0.90        | 0.89     | -0.025   | 0.069    | 0.090         | 0.090     | 0.070     | 0.062     |
| -0.80    | -0.60    | 1.01        | 1.01     | -0.028   | 0.067    | 0.077         | 0.077     | 0.060     | 0.060     |
| -0.80    | -0.70    | 1.04        | 1.03     | -0.037   | 0.065    | 0.074         | 0.074     | 0.050     | 0.055     |
| -0.80    | -0.80    | 1.06        | 1.05     | -0.074   | 0.064    | 0.079         | 0.079     | 0.074     | 0.057     |
| -0.90    | 0.80     | 1.04        | 1.02     | -0.056   | -0.157   | 0.077         | 0.079     | 0.067     | 0.064     |
| -0.90    | 0.70     | 1.01        | 0.99     | -0.029   | -0.192   | 0.086         | 0.088     | 0.054     | 0.061     |
| -0.90    | 0.60     | 1.04        | 1.02     | -0.020   | -0.200   | 0.081         | 0.082     | 0.059     | 0.067     |
| -0.90    | 0.50     | 1.02        | 0.98     | -0.017   | -0.252   | 0.086         | 0.084     | 0.062     | 0.072     |
| -0.90    | 0.40     | 1.00        | 0.96     | -0.022   | -0.258   | 0.079         | 0.079     | 0.066     | 0.067     |
| -0.90    | 0.30     | 0.96        | 0.90     | 0.000    | -0.301   | 0.091         | 0.091     | 0.064     | 0.076     |
| -0.90    | 0.20     | 0.96        | 0.89     | 0.035    | -0.322   | 0.099         | 0.099     | 0.069     | 0.081     |
| -0.90    | 0.10     | 0.88        | 0.81     | 0.091    | -0.284   | 0.123         | 0.123     | 0.088     | 0.100     |
| -0.90    | 0.00     | 0.64        | 0.50     | 0.109    | -0.151   | 0.178         | 0.170     | 0.109     | 0.158     |
| -0.90    | -0.10    | 0.49        | 0.44     | 0.091    | 0.025    | 0.141         | 0.138     | 0.091     | 0.170     |
| -0.90    | -0.20    | 0.71        | 0.66     | 0.094    | 0.190    | 0.153         | 0.151     | 0.079     | 0.171     |
| -0.90    | -0.30    | 0.83        | 0.77     | 0.062    | 0.247    | 0.103         | 0.103     | 0.081     | 0.082     |
| -0.90    | -0.40    | 0.91        | 0.87     | 0.019    | 0.264    | 0.094         | 0.094     | 0.086     | 0.077     |
| -0.90    | -0.50    | 0.95        | 0.92     | -0.003   | 0.246    | 0.079         | 0.079     | 0.067     | 0.067     |
| -0.90    | -0.60    | 0.98        | 0.95     | -0.019   | 0.226    | 0.081         | 0.082     | 0.067     | 0.072     |
| -0.90    | -0.70    | 0.97        | 0.94     | -0.040   | 0.221    | 0.081         | 0.084     | 0.057     | 0.066     |
| -0.90    | -0.80    | 0.96        | 0.93     | -0.072   | 0.177    | 0.074         | 0.076     | 0.072     | 0.064     |
| -0.93    | 0.80     | 0.95        | 0.93     | -0.063   | -0.175   | 0.100         | 0.103     | 0.077     | 0.067     |
| -0.93    | 0.70     | 0.98        | 0.96     | -0.015   | -0.213   | 0.085         | 0.087     | 0.065     | 0.067     |
| -0.93    | 0.60     | 1.00        | 0.96     | -0.003   | -0.243   | 0.085         | 0.087     | 0.063     | 0.063     |
| -0.93    | 0.50     | 0.99        | 0.95     | -0.003   | -0.258   | 0.092         | 0.097     | 0.063     | 0.072     |
| -0.93    | 0.40     | 0.98        | 0.93     | -0.010   | -0.288   | 0.095         | 0.098     | 0.068     | 0.082     |
| -0.93    | 0.30     | 0.96        | 0.88     | -0.002   | -0.348   | 0.105         | 0.112     | 0.075     | 0.085     |
| -0.93    | 0.20     | 0.94        | 0.86     | 0.030    | -0.350   | 0.095         | 0.098     | 0.075     | 0.007     |
| -0.93    | 0.10     | 0.86        | 0.79     | 0.078    | -0.298   | 0.130         | 0.132     | 0.075     | 0.122     |
| -0.93    | 0.00     | 0.65        | 0.59     | 0.067    | -0.200   | 0.178         | 0.173     | 0.098     | 0.155     |
| -0.93    | -0.10    | 0.46        | 0.41     | 0.055    | 0.075    | 0.135         | 0.138     | 0.097     | 0.168     |
| -0.93    | -0.20    | 0.64        | 0.54     | 0.078    | 0.190    | 0.157         | 0.158     | 0.078     | 0.142     |
| -0.93    | -0.30    | 0.85        | 0.79     | 0.052    | 0.300    | 0.105         | 0.108     | 0.070     | 0.097     |
| -0.93    | -0.40    | 0.87        | 0.87     | 0.010    | 0.306    | 0.097         | 0.097     | 0.063     | 0.075     |
| -0.93    | -0.50    | 0.93        | 0.88     | -0.003   | 0.196    | 0.087         | 0.085     | 0.068     | 0.080     |
| -0.93    | -0.60    | 0.95        | 0.90     | -0.012   | 0.278    | 0.102         | 0.102     | 0.062     | 0.078     |
| -0.93    | -0.70    | 0.97        | 0.86     | -0.020   | 0.245    | 0.101         | 0.107     | 0.070     | 0.078     |
| -0.93    | -0.80    | 0.87        | 0.86     | -0.070   | 0.193    | 0.103         | 0.110     | 0.087     | 0.070     |
| -0.95    | 0.80     | 0.88        | 0.86     | -0.042   | -0.174   | 0.104         | 0.105     | 0.075     | 0.070     |
| -0.95    | 0.70     | 0.96        | 0.92     | -0.020   | -0.241   | 0.107         | 0.110     | 0.065     | 0.067     |
| -0.95    | 0.60     | 0.97        | 0.92     | 0.003    | -0.281   | 0.090         | 0.097     | 0.057     | 0.075     |
| -0.95    | 0.50     | 0.83        | 0.73     | -0.008   | -0.316   | 0.267         | 0.259     | 0.070     | 0.079     |
| -0.95    | 0.40     | 0.95        | 0.88     | 0.002    | -0.339   | 0.107         | 0.107     | 0.070     | 0.085     |
| -0.95    | 0.30     | 0.91        | 0.83     | 0.017    | -0.359   | 0.102         | 0.104     | 0.065     | 0.094     |
| -0.95    | 0.20     | 0.89        | 0.81     | 0.073    | -0.359   | 0.115         | 0.114     | 0.070     | 0.099     |
| -0.95    | 0.10     | 0.78        | 0.70     | 0.052    | -0.299   | 0.137         | 0.134     | 0.072     | 0.120     |
| -0.95    | 0.00     | 0.56        | 0.51     | 0.033    | -0.157   | 0.159         | 0.145     | 0.079     | 0.150     |
| -0.95    | -0.10    | 0.40        | 0.36     | 0.015    | 0.018    | 0.144         | 0.137     | 0.085     | 0.159     |
| -0.95    | -0.20    | 0.62        | 0.56     | 0.040    | 0.217    | 0.152         | 0.147     | 0.082     | 0.137     |
| -0.95    | -0.30    | 0.82        | 0.75     | 0.042    | 0.312    | 0.114         | 0.119     | 0.065     | 0.100     |
| -0.95    | -0.40    | 0.85        | 0.77     | 0.015    | 0.342    | 0.104         | 0.100     | 0.062     | 0.082     |
| -0.95    | -0.50    | 0.87        | 0.80     | 0.005    | 0.334    | 0.099         | 0.102     | 0.063     | 0.075     |
| -0.95    | -0.60    | 0.80        | 0.82     | -0.002   | 0.314    | 0.092         | 0.095     | 0.062     | 0.070     |
| -0.95    | -0.70    | 0.88        | 0.83     | -0.017   | 0.282    | 0.102         | 0.102     | 0.067     | 0.072     |
| -0.95    | -0.80    | 0.85        | 0.82     | -0.032   | 0.200    | 0.097         | 0.097     | 0.082     | 0.070     |

## APPENDIX D

### High Reynolds Number Tabulated Data

Table D-1 Station 2,  $X(II) = 2.0$  Entrance

Table D-2 Station 4,  $\theta = 0^\circ$

Table D-3 Station 6,  $\theta = 30^\circ$

Table D-4 Station 8,  $\theta = 60^\circ$

Table D-5 Station 10,  $\theta = 90^\circ$

Table D-6 Station 11,  $X(II) = 1.0$  Exit

The tunnel coordinate positions have been non-dimensionalized on duct half-width  $D_h/2$ . All velocities have been non-dimensionalized on bulk velocity (20 m/s).

Table D-1, Station 2, X(H) = 2.0 Entrance

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.70  | 0.00  | 1.00            | 1.00      | -0.004    | 0.005     | 0.019      | 0.019 | 0.020 | 0.011 |
| 0.60  | 0.00  | 0.94            | 0.99      | 0.004     | 0.002     | 0.021      | 0.021 | 0.017 | 0.013 |
| 0.50  | 0.00  | 0.99            | 0.99      | 0.002     | 0.003     | 0.019      | 0.019 | 0.019 | 0.012 |
| 0.40  | 0.00  | 1.00            | 1.00      | 0.002     | 0.004     | 0.019      | 0.019 | 0.018 | 0.011 |
| 0.30  | 0.00  | 0.99            | 0.99      | 0.002     | 0.001     | 0.026      | 0.026 | 0.020 | 0.013 |
| 0.20  | 0.00  | 0.99            | 0.99      | 0.000     | 0.002     | 0.033      | 0.033 | 0.019 | 0.015 |
| 0.10  | 0.00  | 0.99            | 0.99      | 0.002     | 0.005     | 0.029      | 0.029 | 0.017 | 0.013 |
| 0.00  | 0.00  | 0.99            | 0.99      | 0.001     | 0.004     | 0.024      | 0.024 | 0.016 | 0.014 |
| -0.05 | 0.00  | 0.79            | 0.99      | 0.003     | 0.004     | 0.022      | 0.022 | 0.017 | 0.012 |
| -0.10 | 0.00  | 0.97            | 0.97      | -0.001    | 0.004     | 0.022      | 0.022 | 0.020 | 0.012 |
| -0.15 | 0.00  | 1.00            | 1.00      | 0.000     | 0.005     | 0.019      | 0.019 | 0.014 | 0.011 |
| -0.20 | 0.00  | 0.97            | 0.97      | 0.000     | 0.006     | 0.017      | 0.017 | 0.015 | 0.009 |
| -0.25 | 0.00  | 1.00            | 1.00      | 0.000     | 0.004     | 0.021      | 0.021 | 0.017 | 0.011 |
| -0.30 | 0.00  | 0.79            | 0.79      | 0.000     | 0.005     | 0.017      | 0.017 | 0.013 | 0.010 |
| -0.35 | 0.00  | 1.00            | 1.00      | 0.003     | 0.006     | 0.019      | 0.019 | 0.016 | 0.007 |
| -0.40 | 0.00  | 1.00            | 1.00      | 0.002     | 0.004     | 0.017      | 0.017 | 0.016 | 0.010 |
| -0.45 | 0.00  | 1.00            | 1.00      | 0.003     | 0.005     | 0.017      | 0.017 | 0.015 | 0.012 |
| -0.50 | 0.00  | 1.00            | 1.00      | 0.004     | 0.004     | 0.015      | 0.015 | 0.017 | 0.010 |
| -0.55 | 0.00  | 1.00            | 1.00      | 0.002     | 0.004     | 0.016      | 0.017 | 0.016 | 0.010 |
| -0.60 | 0.00  | 1.00            | 1.00      | 0.003     | 0.004     | 0.017      | 0.017 | 0.017 | 0.009 |
| -0.65 | 0.00  | 1.00            | 1.00      | 0.001     | 0.003     | 0.021      | 0.021 | 0.016 | 0.011 |
| -0.70 | 0.00  | 0.97            | 0.97      | 0.007     | 0.005     | 0.019      | 0.019 | 0.017 | 0.011 |
| -0.75 | 0.00  | 1.00            | 1.00      | 0.001     | 0.007     | 0.018      | 0.018 | 0.016 | 0.011 |
| -0.80 | 0.00  | 0.79            | 0.79      | 0.004     | 0.009     | 0.017      | 0.017 | 0.015 | 0.010 |
| -0.80 | -0.10 | 0.79            | 0.79      | 0.001     | 0.007     | 0.017      | 0.017 | 0.016 | 0.012 |
| 0.75  | 0.10  | 0.94            | 0.95      | 0.001     | 0.008     | 0.017      | 0.017 | 0.015 | 0.010 |
| -0.70 | -0.10 | 0.79            | 0.79      | 0.000     | 0.004     | 0.020      | 0.020 | 0.017 | 0.010 |
| -0.65 | -0.10 | 0.79            | 0.79      | 0.000     | 0.002     | 0.021      | 0.021 | 0.018 | 0.011 |
| -0.60 | -0.10 | 0.77            | 0.79      | 0.000     | 0.002     | 0.022      | 0.022 | 0.017 | 0.013 |
| -0.50 | -0.10 | 0.74            | 0.99      | 0.002     | 0.002     | 0.022      | 0.022 | 0.020 | 0.012 |
| -0.50 | -0.10 | 0.99            | 0.79      | -0.002    | 0.001     | 0.022      | 0.022 | 0.018 | 0.012 |
| -0.45 | -0.10 | 0.93            | 0.99      | -0.001    | 0.003     | 0.023      | 0.023 | 0.019 | 0.011 |
| -0.40 | -0.10 | 0.79            | 0.79      | 0.000     | 0.000     | 0.027      | 0.017 | 0.018 | 0.012 |
| -0.35 | -0.10 | 0.74            | 0.79      | -0.001    | 0.003     | 0.025      | 0.025 | 0.018 | 0.012 |
| -0.30 | -0.10 | 0.99            | 0.79      | -0.001    | 0.000     | 0.017      | 0.027 | 0.017 | 0.013 |
| -0.25 | -0.10 | 0.99            | 0.99      | 0.000     | 0.002     | 0.022      | 0.022 | 0.018 | 0.011 |
| -0.20 | -0.10 | 0.99            | 0.99      | -0.002    | 0.003     | 0.027      | 0.027 | 0.018 | 0.012 |
| -0.15 | -0.10 | 0.79            | 0.79      | -0.001    | 0.002     | 0.024      | 0.024 | 0.016 | 0.012 |
| -0.10 | -0.10 | 0.73            | 0.79      | -0.003    | 0.000     | 0.026      | 0.026 | 0.017 | 0.014 |
| -0.05 | -0.10 | 0.99            | 0.99      | -0.003    | 0.003     | 0.026      | 0.026 | 0.021 | 0.013 |
| 0.00  | -0.10 | 0.79            | 0.79      | -0.003    | 0.004     | 0.026      | 0.026 | 0.019 | 0.011 |
| 0.10  | -0.10 | 1.00            | 1.00      | -0.011    | -0.007    | 0.040      | 0.040 | 0.020 | 0.018 |
| 0.20  | -0.10 | 0.58            | 0.98      | -0.012    | -0.009    | 0.041      | 0.041 | 0.019 | 0.012 |
| 0.30  | -0.10 | 1.00            | 1.00      | -0.011    | -0.004    | 0.040      | 0.040 | 0.010 | 0.017 |
| 0.40  | -0.10 | 0.77            | 0.59      | -0.011    | -0.004    | 0.041      | 0.041 | 0.017 | 0.018 |
| 0.50  | -0.10 | 1.00            | 1.00      | -0.011    | -0.001    | 0.036      | 0.036 | 0.012 | 0.010 |
| 0.60  | -0.10 | 0.79            | 0.75      | -0.010    | -0.002    | 0.035      | 0.035 | 0.021 | 0.017 |
| 0.70  | -0.10 | 0.99            | 0.79      | -0.010    | -0.003    | 0.033      | 0.033 | 0.021 | 0.019 |
| 0.80  | -0.10 | 0.97            | 0.79      | -0.008    | -0.002    | 0.032      | 0.032 | 0.015 | 0.013 |
| 0.80  | -0.20 | 1.00            | 1.00      | -0.012    | -0.005    | 0.031      | 0.031 | 0.020 | 0.017 |
| 0.70  | -0.20 | 1.00            | 0.79      | -0.006    | -0.003    | 0.031      | 0.031 | 0.021 | 0.019 |
| 0.60  | -0.20 | 0.99            | 0.79      | -0.007    | -0.006    | 0.035      | 0.035 | 0.018 | 0.017 |
| 0.50  | -0.20 | 1.00            | 1.00      | -0.008    | -0.005    | 0.039      | 0.039 | 0.017 | 0.017 |
| 0.40  | -0.70 | 1.00            | 1.00      | -0.017    | -0.003    | 0.036      | 0.036 | 0.021 | 0.018 |
| 0.30  | -0.20 | 1.00            | 1.00      | -0.008    | -0.002    | 0.036      | 0.036 | 0.018 | 0.016 |
| 0.20  | -0.20 | 0.99            | 0.59      | -0.008    | -0.007    | 0.037      | 0.037 | 0.021 | 0.018 |
| 0.10  | -0.20 | 0.79            | 0.79      | -0.011    | -0.005    | 0.037      | 0.037 | 0.020 | 0.016 |
| 0.00  | -0.20 | 0.97            | 0.79      | -0.012    | -0.012    | 0.038      | 0.039 | 0.021 | 0.019 |
| -0.05 | -0.20 | 0.99            | 0.77      | -0.008    | -0.008    | 0.041      | 0.041 | 0.021 | 0.020 |
| -0.10 | -0.20 | 1.00            | 1.00      | -0.009    | -0.009    | 0.041      | 0.041 | 0.021 | 0.019 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.15 | -0.20 | 0.99            | 0.99      | -0.012    | -0.009    | 0.042      | 0.042 | 0.022 | 0.018 |
| -0.20 | -0.20 | 0.99            | 0.99      | -0.010    | -0.007    | 0.041      | 0.041 | 0.020 | 0.019 |
| -0.25 | -0.20 | 0.99            | 0.99      | -0.008    | -0.009    | 0.040      | 0.040 | 0.021 | 0.020 |
| -0.30 | -0.20 | 1.00            | 1.00      | -0.006    | -0.006    | 0.040      | 0.040 | 0.023 | 0.017 |
| -0.35 | -0.20 | 1.00            | 1.00      | -0.006    | -0.007    | 0.041      | 0.041 | 0.022 | 0.018 |
| -0.40 | -0.20 | 1.00            | 1.00      | -0.005    | -0.006    | 0.040      | 0.040 | 0.021 | 0.018 |
| -0.45 | -0.20 | 1.00            | 1.00      | -0.004    | -0.004    | 0.044      | 0.045 | 0.022 | 0.017 |
| -0.50 | -0.20 | 1.00            | 1.00      | -0.004    | -0.007    | 0.038      | 0.038 | 0.021 | 0.019 |
| -0.55 | -0.20 | 1.00            | 1.00      | -0.005    | -0.008    | 0.042      | 0.042 | 0.022 | 0.018 |
| -0.60 | -0.20 | 1.00            | 1.00      | -0.004    | -0.005    | 0.038      | 0.039 | 0.022 | 0.017 |
| -0.65 | -0.20 | 1.00            | 1.00      | -0.004    | -0.002    | 0.039      | 0.039 | 0.017 | 0.016 |
| -0.70 | -0.20 | 1.00            | 1.00      | -0.005    | -0.003    | 0.037      | 0.037 | 0.021 | 0.018 |
| -0.75 | -0.20 | 1.00            | 1.00      | -0.003    | -0.001    | 0.039      | 0.039 | 0.020 | 0.017 |
| -0.80 | -0.20 | 1.00            | 1.00      | -0.002    | 0.001     | 0.037      | 0.037 | 0.019 | 0.017 |
| -0.80 | -0.30 | 1.00            | 1.00      | -0.005    | 0.003     | 0.036      | 0.036 | 0.020 | 0.016 |
| -0.75 | -0.30 | 1.00            | 1.00      | -0.005    | -0.001    | 0.034      | 0.034 | 0.021 | 0.018 |
| -0.70 | -0.30 | 1.01            | 1.00      | -0.002    | 0.001     | 0.035      | 0.035 | 0.020 | 0.017 |
| -0.65 | -0.30 | 1.00            | 1.00      | -0.003    | -0.002    | 0.040      | 0.040 | 0.020 | 0.017 |
| -0.60 | -0.30 | 1.00            | 1.00      | -0.008    | -0.001    | 0.039      | 0.039 | 0.021 | 0.018 |
| -0.55 | -0.30 | 1.00            | 1.00      | -0.008    | -0.006    | 0.038      | 0.038 | 0.022 | 0.019 |
| -0.50 | -0.30 | 0.99            | 0.99      | -0.007    | -0.005    | 0.036      | 0.036 | 0.021 | 0.018 |
| -0.47 | -0.30 | 1.00            | 1.00      | -0.008    | -0.008    | 0.038      | 0.038 | 0.021 | 0.018 |
| -0.40 | -0.30 | 1.00            | 1.00      | -0.008    | -0.009    | 0.041      | 0.041 | 0.023 | 0.021 |
| -0.35 | -0.30 | 1.00            | 1.00      | -0.008    | -0.007    | 0.041      | 0.041 | 0.023 | 0.019 |
| -0.30 | -0.30 | 1.00            | 1.00      | -0.009    | -0.008    | 0.042      | 0.042 | 0.023 | 0.019 |
| -0.25 | -0.30 | 1.00            | 1.00      | -0.009    | -0.007    | 0.043      | 0.043 | 0.022 | 0.018 |
| -0.20 | -0.30 | 1.00            | 1.00      | -0.012    | -0.010    | 0.042      | 0.042 | 0.023 | 0.020 |
| -0.15 | -0.30 | 0.99            | 0.99      | -0.010    | -0.010    | 0.043      | 0.043 | 0.021 | 0.017 |
| -0.10 | -0.30 | 1.00            | 1.00      | -0.010    | -0.008    | 0.042      | 0.042 | 0.021 | 0.017 |
| -0.05 | -0.30 | 1.00            | 1.00      | -0.010    | -0.008    | 0.043      | 0.043 | 0.021 | 0.018 |
| 0.00  | -0.30 | 0.99            | 0.99      | -0.011    | -0.008    | 0.044      | 0.044 | 0.023 | 0.020 |
| 0.10  | -0.30 | 0.99            | 0.99      | -0.006    | -0.006    | 0.040      | 0.040 | 0.020 | 0.019 |
| 0.20  | -0.30 | 0.99            | 0.99      | -0.008    | -0.007    | 0.038      | 0.038 | 0.020 | 0.019 |
| 0.30  | -0.30 | 1.00            | 1.00      | -0.005    | -0.003    | 0.037      | 0.037 | 0.018 | 0.016 |
| 0.40  | -0.30 | 1.00            | 1.00      | -0.004    | -0.002    | 0.035      | 0.036 | 0.020 | 0.016 |
| 0.50  | -0.30 | 1.00            | 1.00      | -0.008    | -0.008    | 0.037      | 0.037 | 0.021 | 0.019 |
| 0.60  | -0.30 | 1.00            | 1.00      | -0.007    | -0.003    | 0.037      | 0.037 | 0.019 | 0.018 |
| 0.70  | -0.30 | 1.00            | 1.00      | -0.006    | -0.004    | 0.036      | 0.036 | 0.018 | 0.019 |
| 0.80  | -0.30 | 1.00            | 1.00      | -0.008    | -0.001    | 0.034      | 0.034 | 0.022 | 0.017 |
| 0.80  | -0.40 | 1.00            | 1.00      | -0.012    | -0.002    | 0.033      | 0.033 | 0.021 | 0.019 |
| 0.75  | -0.40 | 1.00            | 1.00      | -0.009    | -0.003    | 0.034      | 0.034 | 0.022 | 0.018 |
| 0.70  | -0.40 | 0.99            | 0.99      | -0.010    | -0.007    | 0.035      | 0.035 | 0.022 | 0.019 |
| 0.65  | -0.40 | 0.99            | 0.99      | -0.009    | -0.004    | 0.037      | 0.037 | 0.021 | 0.020 |
| 0.60  | -0.40 | 1.00            | 0.99      | -0.008    | -0.002    | 0.040      | 0.040 | 0.020 | 0.019 |
| 0.55  | -0.40 | 1.00            | 1.00      | -0.009    | -0.003    | 0.039      | 0.040 | 0.021 | 0.018 |
| 0.50  | -0.40 | 0.99            | 0.99      | -0.009    | -0.004    | 0.038      | 0.038 | 0.021 | 0.018 |
| 0.45  | -0.40 | 1.00            | 1.00      | -0.008    | -0.005    | 0.040      | 0.040 | 0.021 | 0.018 |
| 0.40  | -0.40 | 0.99            | 0.99      | -0.008    | -0.003    | 0.036      | 0.036 | 0.022 | 0.020 |
| 0.30  | -0.40 | 0.99            | 0.99      | -0.009    | -0.007    | 0.043      | 0.043 | 0.020 | 0.022 |
| 0.20  | -0.40 | 1.00            | 1.00      | -0.009    | -0.007    | 0.043      | 0.043 | 0.023 | 0.021 |
| 0.10  | -0.40 | 0.99            | 0.99      | -0.011    | -0.007    | 0.041      | 0.042 | 0.021 | 0.021 |
| 0.00  | -0.40 | 1.00            | 1.00      | -0.007    | -0.007    | 0.042      | 0.042 | 0.019 | 0.019 |
| -0.05 | -0.40 | 0.99            | 0.99      | -0.009    | -0.007    | 0.040      | 0.040 | 0.022 | 0.020 |
| -0.10 | -0.40 | 0.99            | 0.99      | -0.010    | -0.012    | 0.046      | 0.047 | 0.024 | 0.021 |
| -0.15 | -0.40 | 1.00            | 1.00      | -0.008    | -0.006    | 0.039      | 0.039 | 0.022 | 0.018 |
| -0.20 | -0.40 | 1.00            | 1.00      | -0.008    | -0.006    | 0.040      | 0.040 | 0.024 | 0.019 |
| -0.25 | -0.40 | 1.00            | 1.00      | -0.006    | -0.005    | 0.039      | 0.039 | 0.023 | 0.017 |
| -0.30 | -0.40 | 1.00            | 1.00      | -0.008    | -0.008    | 0.042      | 0.042 | 0.023 | 0.020 |
| -0.35 | -0.40 | 1.00            | 1.00      | -0.007    | -0.003    | 0.041      | 0.041 | 0.023 | 0.018 |
| -0.40 | -0.40 | 1.01            | 1.01      | -0.008    | -0.005    | 0.038      | 0.038 | 0.021 | 0.018 |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.45    | -0.40    | 1.00            | 1.00      | -0.008    | -0.004    | 0.037      | 0.037 | 0.022 | 0.018 |
| -0.50    | -0.40    | 1.00            | 1.00      | -0.007    | -0.001    | 0.037      | 0.037 | 0.021 | 0.018 |
| -0.55    | -0.40    | 1.01            | 1.01      | -0.008    | 0.001     | 0.038      | 0.038 | 0.020 | 0.017 |
| -0.60    | -0.40    | 1.00            | 1.00      | -0.010    | 0.002     | 0.032      | 0.032 | 0.021 | 0.016 |
| -0.65    | -0.40    | 1.01            | 1.00      | -0.003    | 0.004     | 0.030      | 0.030 | 0.016 | 0.016 |
| -0.70    | -0.40    | 1.01            | 1.01      | -0.001    | 0.005     | 0.024      | 0.024 | 0.017 | 0.014 |
| -0.75    | -0.40    | 1.00            | 1.00      | -0.002    | 0.004     | 0.028      | 0.028 | 0.018 | 0.013 |
| -0.80    | -0.40    | 1.00            | 1.00      | -0.002    | 0.007     | 0.026      | 0.026 | 0.018 | 0.013 |
| -0.80    | -0.50    | 1.00            | 1.00      | -0.004    | 0.008     | 0.024      | 0.024 | 0.017 | 0.014 |
| -0.75    | -0.50    | 1.01            | 1.01      | -0.003    | 0.007     | 0.027      | 0.027 | 0.020 | 0.015 |
| -0.70    | -0.50    | 1.00            | 1.00      | -0.003    | 0.004     | 0.031      | 0.031 | 0.019 | 0.017 |
| -0.65    | -0.50    | 1.00            | 1.00      | -0.005    | 0.006     | 0.033      | 0.033 | 0.019 | 0.018 |
| -0.60    | -0.50    | 1.00            | 1.00      | -0.007    | 0.005     | 0.030      | 0.030 | 0.019 | 0.015 |
| -0.55    | -0.50    | 1.01            | 1.01      | -0.006    | 0.002     | 0.033      | 0.033 | 0.020 | 0.017 |
| -0.50    | -0.50    | 1.00            | 1.00      | -0.007    | 0.002     | 0.036      | 0.036 | 0.019 | 0.016 |
| -0.45    | -0.50    | 1.01            | 1.01      | -0.004    | 0.004     | 0.028      | 0.028 | 0.019 | 0.017 |
| -0.40    | -0.50    | 1.00            | 1.00      | -0.007    | -0.002    | 0.037      | 0.037 | 0.020 | 0.019 |
| -0.35    | -0.50    | 1.00            | 1.00      | -0.008    | -0.005    | 0.038      | 0.038 | 0.022 | 0.019 |
| -0.30    | -0.50    | 1.00            | 1.00      | -0.007    | -0.003    | 0.038      | 0.038 | 0.022 | 0.017 |
| -0.25    | -0.50    | 1.00            | 1.00      | -0.005    | -0.005    | 0.042      | 0.042 | 0.021 | 0.018 |
| -0.20    | -0.50    | 0.99            | 0.99      | -0.010    | -0.005    | 0.040      | 0.041 | 0.022 | 0.020 |
| -0.15    | -0.50    | 1.00            | 0.99      | -0.009    | -0.005    | 0.038      | 0.038 | 0.024 | 0.020 |
| -0.10    | -0.50    | 0.99            | 0.99      | -0.007    | -0.004    | 0.041      | 0.041 | 0.025 | 0.017 |
| -0.05    | -0.50    | 1.00            | 1.00      | -0.008    | -0.007    | 0.044      | 0.044 | 0.022 | 0.020 |
| 0.00     | -0.50    | 0.99            | 0.99      | -0.008    | -0.005    | 0.041      | 0.042 | 0.025 | 0.020 |
| 0.10     | -0.50    | 0.99            | 0.99      | -0.009    | -0.001    | 0.039      | 0.040 | 0.023 | 0.021 |
| 0.20     | -0.50    | 0.99            | 0.99      | -0.009    | -0.001    | 0.040      | 0.041 | 0.021 | 0.019 |
| 0.30     | -0.50    | 0.99            | 0.99      | -0.008    | -0.004    | 0.041      | 0.041 | 0.021 | 0.018 |
| 0.40     | -0.50    | 0.98            | 0.98      | -0.006    | -0.002    | 0.038      | 0.038 | 0.021 | 0.021 |
| 0.45     | -0.50    | 0.99            | 0.99      | -0.009    | -0.003    | 0.040      | 0.040 | 0.022 | 0.020 |
| 0.50     | -0.50    | 0.99            | 0.99      | -0.010    | 0.000     | 0.041      | 0.041 | 0.021 | 0.019 |
| 0.55     | -0.50    | 0.99            | 0.99      | -0.007    | -0.001    | 0.040      | 0.040 | 0.020 | 0.018 |
| 0.60     | -0.50    | 0.99            | 0.99      | -0.009    | 0.000     | 0.037      | 0.037 | 0.019 | 0.017 |
| 0.65     | -0.50    | 0.97            | 0.99      | -0.006    | -0.004    | 0.038      | 0.038 | 0.022 | 0.019 |
| 0.70     | -0.50    | 0.99            | 0.99      | -0.011    | -0.002    | 0.035      | 0.035 | 0.023 | 0.017 |
| 0.75     | -0.50    | 0.99            | 0.99      | -0.015    | -0.001    | 0.035      | 0.035 | 0.024 | 0.017 |
| 0.80     | -0.50    | 0.99            | 0.99      | -0.009    | 0.000     | 0.033      | 0.033 | 0.026 | 0.018 |
| 0.80     | -0.60    | 0.99            | 0.99      | -0.008    | 0.001     | 0.031      | 0.031 | 0.023 | 0.017 |
| 0.75     | -0.60    | 1.00            | 1.00      | -0.010    | -0.001    | 0.036      | 0.036 | 0.023 | 0.018 |
| 0.70     | -0.60    | 1.00            | 1.00      | -0.010    | -0.002    | 0.037      | 0.037 | 0.024 | 0.018 |
| 0.65     | -0.60    | 0.99            | 0.99      | -0.011    | 0.002     | 0.036      | 0.036 | 0.024 | 0.016 |
| 0.60     | -0.60    | 0.99            | 0.99      | -0.008    | -0.003    | 0.040      | 0.040 | 0.021 | 0.019 |
| 0.55     | -0.60    | 0.77            | 0.99      | -0.010    | 0.001     | 0.036      | 0.036 | 0.024 | 0.018 |
| 0.50     | -0.60    | 0.97            | 0.99      | -0.010    | -0.001    | 0.038      | 0.038 | 0.024 | 0.017 |
| 0.45     | -0.60    | 0.79            | 0.99      | -0.011    | -0.005    | 0.040      | 0.040 | 0.024 | 0.018 |
| 0.40     | -0.60    | 1.00            | 1.00      | -0.006    | -0.003    | 0.039      | 0.039 | 0.022 | 0.015 |
| 0.30     | -0.60    | 1.00            | 1.00      | -0.010    | -0.007    | 0.044      | 0.044 | 0.024 | 0.017 |
| 0.20     | -0.60    | 0.99            | 0.99      | -0.010    | -0.006    | 0.039      | 0.039 | 0.022 | 0.019 |
| 0.10     | -0.60    | 1.00            | 1.00      | -0.010    | -0.003    | 0.040      | 0.040 | 0.024 | 0.018 |
| 0.00     | -0.60    | 0.97            | 0.99      | -0.008    | -0.006    | 0.038      | 0.038 | 0.023 | 0.019 |
| -0.05    | -0.60    | 1.00            | 1.00      | -0.008    | -0.004    | 0.041      | 0.041 | 0.023 | 0.019 |
| -0.10    | -0.60    | 1.00            | 1.00      | -0.007    | -0.004    | 0.043      | 0.043 | 0.022 | 0.015 |
| -0.15    | -0.60    | 1.01            | 1.00      | -0.005    | 0.000     | 0.034      | 0.034 | 0.022 | 0.017 |
| -0.20    | -0.60    | 1.00            | 1.00      | -0.006    | -0.002    | 0.043      | 0.047 | 0.021 | 0.017 |
| -0.25    | -0.60    | 1.00            | 1.00      | -0.008    | -0.007    | 0.039      | 0.039 | 0.021 | 0.020 |
| -0.30    | -0.60    | 1.00            | 1.00      | -0.006    | -0.002    | 0.037      | 0.037 | 0.023 | 0.018 |
| -0.35    | -0.60    | 1.01            | 1.01      | -0.004    | 0.000     | 0.030      | 0.030 | 0.019 | 0.016 |
| -0.40    | -0.60    | 1.01            | 1.00      | -0.009    | 0.001     | 0.030      | 0.030 | 0.021 | 0.016 |
| -0.45    | -0.60    | 1.01            | 1.01      | -0.008    | 0.002     | 0.030      | 0.030 | 0.020 | 0.016 |
| -0.50    | -0.60    | 1.00            | 1.00      | -0.005    | 0.003     | 0.028      | 0.028 | 0.018 | 0.016 |

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| -0.55    | -0.60    | 1.01        | 1.01     | -0.003   | 0.007    | 0.028         | 0.028     | 0.018     | 0.014     |
| 0.60     | -0.60    | 1.01        | 1.01     | -0.003   | 0.008    | 0.020         | 0.020     | 0.010     | 0.014     |
| -0.65    | -0.60    | 1.01        | 1.01     | -0.004   | 0.006    | 0.023         | 0.023     | 0.019     | 0.014     |
| -0.70    | -0.60    | 1.01        | 1.01     | 0.000    | 0.010    | 0.020         | 0.020     | 0.017     | 0.012     |
| -0.75    | -0.60    | 1.01        | 1.01     | 0.001    | 0.010    | 0.018         | 0.018     | 0.017     | 0.013     |
| -0.80    | -0.60    | 1.01        | 1.01     | 0.005    | 0.014    | 0.018         | 0.019     | 0.016     | 0.012     |
| -0.80    | -0.70    | 1.01        | 1.01     | 0.007    | 0.013    | 0.017         | 0.017     | 0.019     | 0.014     |
| -0.75    | -0.70    | 1.01        | 1.01     | 0.003    | 0.010    | 0.017         | 0.017     | 0.016     | 0.014     |
| -0.70    | -0.70    | 1.01        | 1.01     | 0.005    | 0.011    | 0.017         | 0.017     | 0.018     | 0.015     |
| -0.65    | -0.70    | 1.01        | 1.01     | 0.004    | 0.011    | 0.018         | 0.018     | 0.019     | 0.013     |
| -0.60    | -0.70    | 1.01        | 1.01     | 0.002    | 0.008    | 0.019         | 0.019     | 0.018     | 0.013     |
| -0.55    | -0.70    | 1.01        | 1.01     | -0.002   | 0.003    | 0.020         | 0.020     | 0.017     | 0.013     |
| -0.50    | -0.70    | 1.01        | 1.01     | -0.002   | 0.001    | 0.021         | 0.021     | 0.018     | 0.013     |
| -0.45    | -0.70    | 1.01        | 1.01     | -0.005   | 0.001    | 0.027         | 0.027     | 0.020     | 0.014     |
| -0.40    | -0.70    | 1.00        | 1.00     | -0.005   | 0.000    | 0.030         | 0.030     | 0.020     | 0.016     |
| -0.35    | -0.70    | 1.01        | 1.01     | -0.004   | 0.001    | 0.031         | 0.031     | 0.020     | 0.016     |
| -0.30    | -0.70    | 1.01        | 1.01     | -0.006   | -0.002   | 0.032         | 0.032     | 0.022     | 0.016     |
| -0.25    | -0.70    | 1.01        | 1.00     | -0.005   | -0.001   | 0.034         | 0.034     | 0.023     | 0.015     |
| -0.20    | -0.70    | 1.00        | 1.00     | -0.002   | 0.000    | 0.029         | 0.029     | 0.020     | 0.015     |
| -0.15    | -0.70    | 1.01        | 1.01     | -0.007   | -0.001   | 0.036         | 0.036     | 0.022     | 0.016     |
| -0.10    | -0.70    | 1.01        | 1.00     | -0.005   | 0.002    | 0.035         | 0.035     | 0.022     | 0.016     |
| -0.05    | -0.70    | 1.00        | 1.00     | -0.010   | -0.005   | 0.037         | 0.037     | 0.021     | 0.018     |
| 0.00     | -0.70    | 1.01        | 1.01     | -0.007   | -0.004   | 0.039         | 0.039     | 0.021     | 0.016     |
| 0.10     | -0.70    | 1.00        | 1.00     | -0.008   | -0.002   | 0.035         | 0.035     | 0.022     | 0.017     |
| 0.20     | -0.70    | 1.00        | 1.00     | -0.007   | -0.005   | 0.037         | 0.037     | 0.023     | 0.019     |
| 0.30     | -0.70    | 1.00        | 1.00     | -0.009   | -0.004   | 0.034         | 0.034     | 0.021     | 0.018     |
| 0.40     | -0.70    | 1.00        | 1.00     | -0.005   | 0.001    | 0.033         | 0.033     | 0.021     | 0.018     |
| 0.45     | -0.70    | 1.00        | 1.00     | -0.010   | 0.004    | 0.034         | 0.034     | 0.019     | 0.017     |
| 0.50     | -0.70    | 1.00        | 1.00     | -0.007   | 0.002    | 0.037         | 0.037     | 0.023     | 0.018     |
| 0.55     | -0.70    | 1.00        | 1.00     | -0.006   | 0.003    | 0.034         | 0.034     | 0.020     | 0.018     |
| 0.60     | -0.70    | 1.00        | 1.00     | -0.004   | 0.002    | 0.034         | 0.034     | 0.019     | 0.019     |
| 0.65     | -0.70    | 0.99        | 0.99     | -0.008   | 0.000    | 0.035         | 0.035     | 0.019     | 0.019     |
| 0.70     | -0.70    | 0.99        | 0.99     | -0.013   | 0.003    | 0.034         | 0.034     | 0.022     | 0.017     |
| 0.75     | -0.70    | 1.00        | 1.00     | -0.012   | 0.004    | 0.029         | 0.029     | 0.020     | 0.014     |
| 0.80     | -0.70    | 0.99        | 0.99     | -0.010   | 0.005    | 0.030         | 0.030     | 0.023     | 0.014     |
| 0.80     | -0.80    | 0.99        | 0.99     | -0.008   | 0.006    | 0.028         | 0.028     | 0.021     | 0.014     |
| 0.75     | -0.80    | 1.00        | 0.99     | -0.013   | 0.002    | 0.030         | 0.030     | 0.021     | 0.016     |
| 0.70     | -0.80    | 0.99        | 0.99     | -0.011   | 0.004    | 0.029         | 0.030     | 0.022     | 0.016     |
| 0.65     | -0.80    | 0.99        | 0.99     | -0.013   | 0.003    | 0.033         | 0.033     | 0.020     | 0.015     |
| 0.60     | -0.80    | 1.00        | 1.00     | -0.011   | 0.002    | 0.034         | 0.034     | 0.021     | 0.017     |
| 0.55     | -0.80    | 0.99        | 0.99     | -0.011   | 0.004    | 0.029         | 0.029     | 0.023     | 0.016     |
| 0.50     | -0.80    | 1.00        | 1.00     | -0.007   | 0.005    | 0.028         | 0.028     | 0.021     | 0.016     |
| 0.45     | -0.80    | 0.99        | 0.99     | -0.009   | 0.003    | 0.029         | 0.030     | 0.018     | 0.017     |
| 0.40     | -0.80    | 1.00        | 1.00     | -0.010   | 0.007    | 0.026         | 0.026     | 0.021     | 0.014     |
| 0.30     | -0.80    | 1.00        | 1.00     | -0.006   | 0.000    | 0.025         | 0.025     | 0.023     | 0.015     |
| 0.20     | -0.80    | 1.00        | 1.00     | -0.003   | 0.005    | 0.028         | 0.028     | 0.018     | 0.015     |
| 0.10     | -0.80    | 1.00        | 1.00     | -0.005   | 0.003    | 0.024         | 0.024     | 0.022     | 0.015     |
| 0.00     | -0.80    | 1.00        | 1.00     | -0.005   | -0.003   | 0.028         | 0.028     | 0.022     | 0.016     |
| -0.05    | -0.80    | 1.00        | 1.00     | -0.006   | 0.000    | 0.029         | 0.029     | 0.021     | 0.015     |
| -0.10    | -0.80    | 1.00        | 1.00     | -0.005   | 0.001    | 0.026         | 0.026     | 0.022     | 0.015     |
| -0.15    | -0.80    | 1.00        | 1.00     | -0.002   | 0.002    | 0.023         | 0.023     | 0.020     | 0.013     |
| -0.20    | -0.80    | 1.00        | 1.00     | -0.004   | -0.001   | 0.026         | 0.026     | 0.019     | 0.015     |
| -0.25    | -0.80    | 1.01        | 1.01     | -0.006   | -0.002   | 0.027         | 0.027     | 0.021     | 0.015     |
| -0.30    | -0.80    | 1.00        | 1.00     | -0.005   | 0.002    | 0.025         | 0.025     | 0.022     | 0.014     |
| -0.35    | -0.80    | 1.00        | 1.00     | -0.003   | -0.002   | 0.030         | 0.030     | 0.024     | 0.015     |
| -0.40    | -0.80    | 1.00        | 1.00     | -0.003   | 0.002    | 0.026         | 0.026     | 0.019     | 0.016     |
| -0.45    | -0.80    | 1.00        | 1.00     | -0.006   | 0.003    | 0.020         | 0.020     | 0.017     | 0.012     |
| -0.50    | -0.80    | 1.00        | 1.00     | -0.002   | 0.001    | 0.018         | 0.018     | 0.019     | 0.013     |
| -0.55    | -0.80    | 1.01        | 1.01     | -0.001   | 0.004    | 0.018         | 0.018     | 0.020     | 0.012     |
| -0.60    | -0.80    | 1.00        | 1.00     | -0.001   | 0.004    | 0.022         | 0.022     | 0.020     | 0.013     |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U'}_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.65 | -0.80 | 1.01            | 1.01      | -0.002    | 0.006     | 0.018            | 0.018 | 0.017 | 0.013 |
| -0.70 | -0.80 | 1.00            | 1.00      | -0.003    | 0.008     | 0.015            | 0.015 | 0.018 | 0.013 |
| -0.75 | -0.80 | 1.00            | 1.00      | 0.003     | 0.013     | 0.018            | 0.018 | 0.019 | 0.013 |
| -0.80 | -0.80 | 1.00            | 1.00      | 0.006     | 0.014     | 0.017            | 0.017 | 0.019 | 0.012 |
| 0.70  | 0.00  | 0.99            | 0.99      | -0.008    | 0.003     | 0.034            | 0.034 | 0.024 | 0.015 |
| 0.60  | 0.00  | 0.99            | 0.99      | -0.002    | 0.001     | 0.033            | 0.033 | 0.018 | 0.015 |
| 0.50  | 0.00  | 0.99            | 0.99      | -0.002    | 0.001     | 0.032            | 0.032 | 0.020 | 0.015 |
| 0.40  | 0.00  | 0.99            | 0.99      | -0.004    | -0.001    | 0.035            | 0.035 | 0.022 | 0.017 |
| 0.30  | 0.00  | 1.00            | 1.00      | -0.001    | -0.002    | 0.033            | 0.033 | 0.018 | 0.015 |
| 0.20  | 0.00  | 1.00            | 1.00      | -0.003    | -0.001    | 0.034            | 0.034 | 0.019 | 0.016 |
| 0.10  | 0.00  | 0.99            | 0.99      | -0.006    | -0.003    | 0.033            | 0.033 | 0.022 | 0.017 |
| 0.00  | 0.00  | 0.99            | 0.99      | -0.006    | -0.003    | 0.034            | 0.034 | 0.024 | 0.016 |
| -0.05 | 0.00  | 1.00            | 1.00      | -0.003    | 0.001     | 0.031            | 0.031 | 0.020 | 0.014 |
| -0.10 | 0.00  | 1.00            | 1.00      | -0.006    | -0.001    | 0.032            | 0.032 | 0.022 | 0.015 |
| -0.15 | 0.00  | 1.00            | 1.00      | -0.006    | 0.000     | 0.029            | 0.029 | 0.022 | 0.015 |
| -0.20 | 0.00  | 0.99            | 0.97      | -0.004    | -0.001    | 0.030            | 0.030 | 0.018 | 0.015 |
| -0.25 | 0.00  | 1.00            | 1.00      | -0.002    | -0.001    | 0.031            | 0.031 | 0.020 | 0.015 |
| 0.70  | 0.00  | 1.00            | 1.00      | -0.001    | 0.002     | 0.023            | 0.023 | 0.017 | 0.013 |
| 0.35  | 0.00  | 1.00            | 1.00      | -0.003    | 0.000     | 0.028            | 0.028 | 0.022 | 0.014 |
| -0.40 | 0.00  | 1.00            | 1.00      | -0.001    | 0.001     | 0.022            | 0.022 | 0.024 | 0.015 |
| -0.45 | 0.00  | 1.00            | 1.00      | -0.002    | 0.002     | 0.023            | 0.023 | 0.017 | 0.012 |
| -0.50 | 0.00  | 1.00            | 1.00      | -0.002    | -0.001    | 0.024            | 0.024 | 0.019 | 0.014 |
| -0.55 | 0.00  | 1.00            | 1.00      | -0.002    | 0.002     | 0.020            | 0.020 | 0.018 | 0.015 |
| -0.60 | 0.00  | 1.00            | 1.00      | -0.003    | 0.002     | 0.020            | 0.020 | 0.019 | 0.015 |
| -0.65 | 0.00  | 1.00            | 1.00      | -0.001    | 0.003     | 0.020            | 0.020 | 0.017 | 0.011 |
| -0.70 | 0.00  | 1.00            | 1.00      | -0.001    | 0.004     | 0.018            | 0.018 | 0.017 | 0.012 |
| -0.75 | 0.00  | 1.00            | 1.00      | 0.004     | 0.006     | 0.019            | 0.019 | 0.022 | 0.011 |
| -0.80 | 0.00  | 1.00            | 1.00      | 0.005     | 0.007     | 0.020            | 0.020 | 0.017 | 0.012 |
| -0.80 | 0.10  | 1.00            | 1.00      | 0.003     | 0.007     | 0.020            | 0.020 | 0.010 | 0.012 |
| -0.75 | 0.10  | 1.01            | 1.01      | 0.003     | 0.006     | 0.019            | 0.019 | 0.015 | 0.011 |
| -0.70 | 0.10  | 1.00            | 1.00      | 0.006     | 0.006     | 0.019            | 0.019 | 0.017 | 0.013 |
| -0.65 | 0.10  | 1.00            | 1.00      | 0.003     | 0.005     | 0.018            | 0.018 | 0.018 | 0.011 |
| -0.60 | 0.10  | 1.00            | 1.00      | -0.002    | 0.000     | 0.025            | 0.025 | 0.018 | 0.014 |
| -0.55 | 0.10  | 1.00            | 1.00      | -0.004    | 0.003     | 0.018            | 0.018 | 0.018 | 0.012 |
| -0.50 | 0.10  | 1.00            | 1.00      | 0.000     | 0.003     | 0.022            | 0.022 | 0.017 | 0.013 |
| -0.45 | 0.10  | 1.00            | 1.00      | -0.001    | 0.001     | 0.024            | 0.024 | 0.019 | 0.015 |
| -0.40 | 0.10  | 1.00            | 1.00      | -0.002    | 0.001     | 0.027            | 0.027 | 0.018 | 0.014 |
| -0.35 | 0.10  | 1.00            | 1.00      | -0.002    | 0.003     | 0.028            | 0.028 | 0.020 | 0.014 |
| -0.30 | 0.10  | 0.97            | 0.99      | -0.002    | 0.002     | 0.027            | 0.027 | 0.019 | 0.015 |
| -0.25 | 0.10  | 1.00            | 1.00      | -0.002    | 0.002     | 0.029            | 0.029 | 0.019 | 0.015 |
| -0.20 | 0.10  | 1.00            | 1.00      | -0.004    | 0.001     | 0.028            | 0.028 | 0.020 | 0.016 |
| -0.15 | 0.10  | 0.99            | 0.99      | -0.005    | -0.001    | 0.032            | 0.032 | 0.022 | 0.018 |
| -0.10 | 0.10  | 0.99            | 0.97      | -0.004    | 0.001     | 0.031            | 0.031 | 0.020 | 0.017 |
| -0.05 | 0.10  | 0.99            | 0.95      | -0.007    | 0.002     | 0.030            | 0.030 | 0.022 | 0.015 |
| 0.00  | 0.10  | 1.00            | 1.00      | -0.004    | 0.001     | 0.035            | 0.035 | 0.020 | 0.016 |
| 0.10  | 0.10  | 1.00            | 0.99      | -0.002    | -0.001    | 0.031            | 0.031 | 0.020 | 0.016 |
| 0.20  | 0.10  | 1.00            | 1.00      | -0.002    | 0.002     | 0.032            | 0.032 | 0.022 | 0.016 |
| 0.30  | 0.10  | 1.00            | 1.00      | -0.003    | 0.000     | 0.031            | 0.031 | 0.020 | 0.017 |
| 0.40  | 0.10  | 0.99            | 0.97      | -0.005    | 0.002     | 0.036            | 0.036 | 0.021 | 0.017 |
| 0.50  | 0.10  | 0.99            | 0.97      | 0.000     | 0.001     | 0.037            | 0.037 | 0.020 | 0.016 |
| 0.60  | 0.10  | 0.99            | 0.99      | -0.001    | 0.002     | 0.035            | 0.035 | 0.021 | 0.016 |
| 0.70  | 0.10  | 0.97            | 0.97      | -0.006    | 0.003     | 0.034            | 0.034 | 0.017 | 0.016 |
| 0.80  | 0.10  | 1.00            | 1.00      | 0.001     | 0.005     | 0.031            | 0.031 | 0.015 | 0.015 |
| 0.80  | 0.20  | 1.00            | 1.00      | -0.007    | 0.004     | 0.032            | 0.032 | 0.018 | 0.016 |
| 0.70  | 0.20  | 1.00            | 1.00      | -0.006    | 0.003     | 0.034            | 0.034 | 0.021 | 0.016 |
| 0.60  | 0.20  | 1.00            | 1.00      | -0.003    | 0.000     | 0.035            | 0.035 | 0.020 | 0.015 |
| 0.50  | 0.20  | 1.00            | 1.00      | -0.003    | 0.001     | 0.034            | 0.034 | 0.021 | 0.015 |
| 0.40  | 0.20  | 1.00            | 1.00      | -0.004    | -0.001    | 0.033            | 0.033 | 0.020 | 0.018 |
| 0.30  | 0.20  | 1.01            | 1.01      | -0.004    | 0.001     | 0.034            | 0.034 | 0.020 | 0.014 |
| 0.20  | 0.20  | 1.00            | 1.00      | -0.003    | 0.004     | 0.035            | 0.035 | 0.020 | 0.014 |

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.10     | 0.20     | 1.00        | 1.00     | -0.005   | -0.001   | 0.036         | 0.036     | 0.020     | 0.000     |
| 0.00     | 0.20     | 1.00        | 1.00     | -0.004   | 0.001    | 0.034         | 0.034     | 0.021     | 0.019     |
| -0.05    | 0.20     | 1.00        | 1.00     | -0.004   | 0.000    | 0.036         | 0.036     | 0.021     | 0.016     |
| -0.10    | 0.20     | 1.01        | 1.01     | -0.004   | -0.001   | 0.035         | 0.035     | 0.019     | 0.017     |
| -0.15    | 0.20     | 1.00        | 1.00     | -0.005   | -0.001   | 0.034         | 0.034     | 0.021     | 0.016     |
| -0.20    | 0.20     | 1.00        | 1.00     | -0.002   | 0.001    | 0.032         | 0.032     | 0.019     | 0.016     |
| -0.25    | 0.20     | 1.00        | 1.00     | -0.006   | 0.000    | 0.032         | 0.032     | 0.023     | 0.017     |
| -0.30    | 0.20     | 1.01        | 1.01     | -0.004   | 0.002    | 0.033         | 0.033     | 0.018     | 0.017     |
| -0.35    | 0.20     | 1.01        | 1.01     | -0.005   | 0.002    | 0.030         | 0.030     | 0.019     | 0.015     |
| -0.40    | 0.20     | 1.01        | 1.01     | -0.005   | 0.001    | 0.029         | 0.029     | 0.021     | 0.016     |
| -0.45    | 0.20     | 1.01        | 1.01     | -0.003   | 0.002    | 0.027         | 0.027     | 0.021     | 0.014     |
| -0.50    | 0.20     | 1.01        | 1.01     | -0.005   | -0.002   | 0.028         | 0.028     | 0.021     | 0.016     |
| -0.55    | 0.20     | 1.01        | 1.01     | -0.002   | 0.000    | 0.025         | 0.025     | 0.018     | 0.013     |
| -0.60    | 0.20     | 1.01        | 1.01     | 0.002    | 0.001    | 0.025         | 0.025     | 0.019     | 0.014     |
| -0.65    | 0.20     | 1.01        | 1.01     | 0.002    | 0.005    | 0.023         | 0.023     | 0.017     | 0.012     |
| -0.70    | 0.20     | 1.01        | 1.01     | 0.002    | 0.005    | 0.024         | 0.024     | 0.018     | 0.012     |
| -0.75    | 0.20     | 1.01        | 1.01     | 0.003    | 0.005    | 0.023         | 0.023     | 0.019     | 0.014     |
| -0.80    | 0.20     | 1.01        | 1.01     | 0.004    | 0.005    | 0.021         | 0.021     | 0.017     | 0.013     |
| -0.80    | 0.30     | 1.01        | 1.01     | 0.004    | 0.004    | 0.020         | 0.020     | 0.018     | 0.012     |
| -0.75    | 0.30     | 1.01        | 1.01     | 0.001    | 0.004    | 0.029         | 0.029     | 0.019     | 0.013     |
| -0.70    | 0.30     | 1.01        | 1.01     | 0.002    | 0.003    | 0.027         | 0.027     | 0.016     | 0.015     |
| -0.65    | 0.30     | 1.01        | 1.01     | -0.003   | 0.001    | 0.032         | 0.032     | 0.020     | 0.015     |
| -0.60    | 0.30     | 1.01        | 1.01     | -0.002   | 0.000    | 0.030         | 0.030     | 0.019     | 0.015     |
| -0.55    | 0.30     | 1.01        | 1.01     | -0.003   | -0.001   | 0.031         | 0.031     | 0.020     | 0.016     |
| -0.50    | 0.30     | 1.00        | 1.00     | -0.003   | -0.001   | 0.030         | 0.030     | 0.021     | 0.016     |
| -0.47    | 0.30     | 1.01        | 1.01     | -0.005   | -0.002   | 0.030         | 0.030     | 0.021     | 0.019     |
| -0.40    | 0.30     | 1.00        | 1.00     | -0.003   | 0.000    | 0.034         | 0.034     | 0.019     | 0.016     |
| -0.35    | 0.30     | 1.00        | 1.00     | 0.000    | 0.001    | 0.031         | 0.031     | 0.021     | 0.016     |
| -0.30    | 0.30     | 0.99        | 0.99     | 0.000    | -0.001   | 0.033         | 0.033     | 0.020     | 0.017     |
| -0.25    | 0.30     | 1.00        | 1.00     | -0.001   | 0.000    | 0.037         | 0.037     | 0.020     | 0.017     |
| -0.20    | 0.30     | 0.99        | 0.99     | -0.003   | 0.000    | 0.034         | 0.034     | 0.022     | 0.017     |
| -0.15    | 0.30     | 1.00        | 1.00     | -0.002   | -0.003   | 0.036         | 0.036     | 0.018     | 0.016     |
| -0.10    | 0.30     | 0.99        | 0.99     | -0.002   | -0.004   | 0.037         | 0.037     | 0.019     | 0.017     |
| -0.05    | 0.30     | 0.99        | 0.99     | -0.006   | -0.005   | 0.036         | 0.036     | 0.022     | 0.018     |
| 0.00     | 0.30     | 0.99        | 0.99     | -0.004   | -0.005   | 0.039         | 0.039     | 0.018     | 0.019     |
| 0.10     | 0.30     | 0.99        | 0.99     | -0.006   | -0.003   | 0.037         | 0.037     | 0.019     | 0.018     |
| 0.20     | 0.30     | 0.99        | 0.99     | -0.004   | -0.004   | 0.035         | 0.036     | 0.020     | 0.018     |
| 0.30     | 0.30     | 0.99        | 0.99     | -0.004   | -0.002   | 0.037         | 0.037     | 0.018     | 0.017     |
| 0.40     | 0.30     | 0.99        | 0.99     | -0.008   | -0.003   | 0.037         | 0.037     | 0.020     | 0.018     |
| 0.50     | 0.30     | 0.99        | 0.99     | -0.006   | -0.003   | 0.039         | 0.039     | 0.021     | 0.017     |
| 0.60     | 0.30     | 0.98        | 0.98     | -0.006   | -0.004   | 0.033         | 0.033     | 0.018     | 0.020     |
| 0.70     | 0.30     | 0.98        | 0.98     | -0.010   | -0.001   | 0.038         | 0.038     | 0.017     | 0.017     |
| 0.80     | 0.30     | 0.98        | 0.98     | -0.006   | 0.000    | 0.035         | 0.035     | 0.020     | 0.019     |
| 0.80     | 0.40     | 0.97        | 0.97     | 0.006    | -0.007   | 0.034         | 0.034     | 0.016     | 0.017     |
| 0.75     | 0.40     | 0.98        | 0.98     | -0.004   | -0.007   | 0.035         | 0.035     | 0.016     | 0.019     |
| 0.70     | 0.40     | 0.98        | 0.98     | -0.004   | -0.005   | 0.033         | 0.033     | 0.015     | 0.019     |
| 0.65     | 0.40     | 0.98        | 0.98     | -0.009   | -0.004   | 0.037         | 0.037     | 0.017     | 0.018     |
| 0.60     | 0.40     | 0.98        | 0.98     | -0.008   | -0.006   | 0.039         | 0.039     | 0.018     | 0.017     |
| 0.55     | 0.40     | 0.99        | 0.99     | -0.007   | -0.006   | 0.038         | 0.038     | 0.017     | 0.018     |
| 0.50     | 0.40     | 0.98        | 0.98     | -0.006   | -0.006   | 0.034         | 0.034     | 0.021     | 0.020     |
| 0.45     | 0.40     | 0.98        | 0.98     | -0.006   | -0.006   | 0.034         | 0.034     | 0.021     | 0.019     |
| 0.40     | 0.40     | 0.99        | 0.99     | -0.007   | -0.008   | 0.036         | 0.036     | 0.019     | 0.018     |
| 0.30     | 0.40     | 0.99        | 0.99     | -0.008   | -0.004   | 0.035         | 0.035     | 0.020     | 0.017     |
| 0.20     | 0.40     | 0.98        | 0.98     | -0.008   | -0.004   | 0.038         | 0.038     | 0.019     | 0.018     |
| 0.10     | 0.40     | 0.99        | 0.99     | -0.009   | -0.004   | 0.039         | 0.039     | 0.020     | 0.017     |
| 0.00     | 0.40     | 0.99        | 0.99     | -0.004   | -0.002   | 0.037         | 0.037     | 0.020     | 0.019     |
| -0.05    | 0.40     | 0.99        | 0.99     | -0.004   | -0.002   | 0.038         | 0.038     | 0.020     | 0.017     |
| -0.10    | 0.40     | 1.00        | 1.00     | -0.002   | -0.002   | 0.039         | 0.039     | 0.020     | 0.017     |
| -0.15    | 0.40     | 0.99        | 0.99     | -0.003   | -0.002   | 0.036         | 0.036     | 0.021     | 0.018     |
| -0.20    | 0.40     | 1.00        | 1.00     | -0.002   | -0.001   | 0.036         | 0.036     | 0.019     | 0.016     |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| -0.25    | 0.40     | 0.99        | 0.59     | -0.004   | -0.002   | 0.038         | 0.038     | 0.020     | 0.017     |
| -0.30    | 0.40     | 1.00        | 1.00     | 0.002    | -0.002   | 0.036         | 0.036     | 0.020     | 0.017     |
| -0.35    | 0.40     | 1.00        | 1.00     | -0.001   | -0.001   | 0.035         | 0.035     | 0.021     | 0.017     |
| -0.40    | 0.40     | 0.99        | 0.99     | -0.003   | 0.000    | 0.034         | 0.034     | 0.020     | 0.016     |
| -0.45    | 0.40     | 1.00        | 1.00     | -0.004   | 0.000    | 0.029         | 0.029     | 0.021     | 0.017     |
| -0.50    | 0.40     | 1.00        | 1.00     | -0.003   | -0.002   | 0.036         | 0.036     | 0.020     | 0.015     |
| -0.55    | 0.40     | 1.00        | 1.00     | -0.003   | -0.004   | 0.034         | 0.034     | 0.020     | 0.017     |
| -0.60    | 0.40     | 1.00        | 1.00     | -0.001   | 0.000    | 0.032         | 0.032     | 0.018     | 0.015     |
| -0.65    | 0.40     | 1.00        | 1.00     | -0.005   | -0.004   | 0.038         | 0.038     | 0.019     | 0.018     |
| -0.70    | 0.40     | 1.00        | 1.00     | -0.008   | -0.005   | 0.037         | 0.037     | 0.019     | 0.019     |
| -0.75    | 0.40     | 1.01        | 1.01     | -0.007   | -0.002   | 0.041         | 0.041     | 0.017     | 0.018     |
| -0.80    | 0.40     | 1.00        | 1.00     | -0.007   | -0.002   | 0.040         | 0.040     | 0.020     | 0.018     |
| -0.80    | 0.50     | 1.00        | 1.00     | -0.005   | -0.003   | 0.039         | 0.039     | 0.018     | 0.020     |
| -0.75    | 0.50     | 1.00        | 1.00     | -0.008   | -0.005   | 0.035         | 0.036     | 0.020     | 0.018     |
| -0.70    | 0.50     | 1.00        | 1.00     | -0.007   | 0.000    | 0.038         | 0.038     | 0.017     | 0.017     |
| -0.65    | 0.50     | 1.00        | 1.00     | -0.006   | -0.002   | 0.038         | 0.038     | 0.018     | 0.017     |
| -0.60    | 0.50     | 1.00        | 1.00     | -0.005   | -0.005   | 0.037         | 0.037     | 0.020     | 0.017     |
| -0.55    | 0.50     | 0.99        | 0.99     | -0.004   | -0.004   | 0.037         | 0.038     | 0.021     | 0.016     |
| -0.50    | 0.50     | 1.00        | 1.00     | -0.007   | -0.007   | 0.036         | 0.036     | 0.020     | 0.018     |
| -0.45    | 0.50     | 1.00        | 1.00     | -0.008   | -0.005   | 0.038         | 0.038     | 0.022     | 0.018     |
| -0.40    | 0.50     | 0.77        | 0.99     | -0.008   | -0.005   | 0.036         | 0.036     | 0.019     | 0.018     |
| -0.35    | 0.50     | 0.99        | 0.79     | 0.008    | -0.006   | 0.037         | 0.037     | 0.019     | 0.017     |
| -0.30    | 0.50     | 0.99        | 0.99     | -0.007   | -0.004   | 0.038         | 0.038     | 0.019     | 0.013     |
| -0.25    | 0.50     | 0.95        | 0.99     | -0.007   | -0.003   | 0.037         | 0.037     | 0.019     | 0.017     |
| -0.20    | 0.50     | 0.99        | 0.99     | -0.007   | -0.005   | 0.040         | 0.040     | 0.020     | 0.018     |
| -0.15    | 0.50     | 0.59        | 0.59     | -0.008   | -0.005   | 0.036         | 0.036     | 0.020     | 0.017     |
| -0.10    | 0.50     | 0.79        | 0.99     | -0.008   | -0.004   | 0.037         | 0.037     | 0.020     | 0.018     |
| -0.05    | 0.50     | 1.00        | 1.00     | 0.006    | -0.003   | 0.038         | 0.038     | 0.020     | 0.021     |
| 0.00     | 0.50     | 0.77        | 0.99     | -0.010   | -0.002   | 0.039         | 0.039     | 0.020     | 0.019     |
| 0.10     | 0.50     | 0.99        | 0.99     | -0.012   | -0.001   | 0.039         | 0.039     | 0.020     | 0.018     |
| 0.20     | 0.50     | 0.99        | 0.99     | -0.014   | -0.005   | 0.037         | 0.038     | 0.021     | 0.018     |
| 0.30     | 0.50     | 0.79        | 0.99     | -0.017   | -0.004   | 0.036         | 0.036     | 0.021     | 0.017     |
| 0.40     | 0.50     | 0.98        | 0.78     | -0.014   | -0.010   | 0.035         | 0.035     | 0.021     | 0.019     |
| 0.45     | 0.50     | 0.98        | 0.98     | 0.012    | -0.011   | 0.036         | 0.036     | 0.020     | 0.019     |
| 0.50     | 0.50     | 0.78        | 0.78     | -0.012   | -0.012   | 0.034         | 0.034     | 0.020     | 0.020     |
| 0.55     | 0.50     | 0.98        | 0.98     | -0.010   | -0.012   | 0.037         | 0.037     | 0.020     | 0.019     |
| 0.60     | 0.50     | 0.98        | 0.98     | -0.010   | -0.013   | 0.035         | 0.035     | 0.023     | 0.019     |
| 0.65     | 0.50     | 0.98        | 0.98     | -0.009   | -0.008   | 0.037         | 0.037     | 0.018     | 0.020     |
| 0.70     | 0.50     | 0.78        | 0.98     | -0.008   | -0.004   | 0.038         | 0.038     | 0.021     | 0.015     |
| 0.75     | 0.50     | 0.96        | 0.96     | -0.008   | -0.003   | 0.039         | 0.040     | 0.019     | 0.015     |
| 0.80     | 0.50     | 0.94        | 0.94     | -0.010   | -0.006   | 0.027         | 0.027     | 0.023     | 0.015     |
| 0.80     | 0.00     | 0.94        | 0.94     | -0.014   | -0.010   | 0.021         | 0.021     | 0.021     | 0.017     |
| 0.75     | 0.00     | 0.74        | 0.54     | -0.008   | -0.006   | 0.023         | 0.023     | 0.011     | 0.017     |
| 0.70     | 0.50     | 0.74        | 0.94     | -0.005   | -0.006   | 0.019         | 0.020     | 0.020     | 0.016     |
| 0.65     | 0.50     | 0.94        | 0.94     | -0.006   | -0.009   | 0.022         | 0.022     | 0.019     | 0.016     |
| 0.60     | 0.50     | 0.74        | 0.94     | -0.008   | -0.010   | 0.023         | 0.023     | 0.020     | 0.016     |
| 0.55     | 0.50     | 0.94        | 0.94     | -0.007   | -0.012   | 0.020         | 0.020     | 0.017     | 0.016     |
| 0.50     | 0.50     | 0.94        | 0.93     | -0.012   | -0.011   | 0.023         | 0.023     | 0.020     | 0.016     |
| 0.45     | 0.50     | 0.93        | 0.53     | -0.016   | -0.011   | 0.021         | 0.021     | 0.023     | 0.015     |
| 0.40     | 0.50     | 0.75        | 0.95     | -0.013   | -0.011   | 0.025         | 0.025     | 0.018     | 0.016     |
| 0.30     | 0.50     | 0.77        | 0.97     | -0.013   | -0.014   | 0.026         | 0.026     | 0.015     | 0.019     |
| 0.20     | 0.50     | 0.77        | 0.97     | -0.017   | -0.013   | 0.026         | 0.026     | 0.010     | 0.017     |
| 0.10     | 0.50     | 0.77        | 0.97     | -0.017   | -0.002   | 0.028         | 0.028     | 0.018     | 0.017     |
| 0.00     | 0.50     | 0.77        | 0.77     | -0.007   | 0.005    | 0.028         | 0.028     | 0.022     | 0.010     |
| -0.05    | 0.50     | 0.79        | 0.99     | -0.003   | 0.000    | 0.028         | 0.029     | 0.021     | 0.020     |
| 0.10     | 0.50     | 0.95        | 0.97     | -0.006   | -0.005   | 0.040         | 0.040     | 0.020     | 0.013     |
| 0.15     | 0.50     | 1.00        | 1.00     | -0.007   | -0.003   | 0.037         | 0.037     | 0.016     | 0.019     |
| 0.20     | 0.50     | 1.00        | 0.77     | -0.007   | -0.006   | 0.041         | 0.041     | 0.018     | 0.017     |
| 0.25     | 0.50     | 0.99        | 0.99     | -0.009   | -0.002   | 0.035         | 0.035     | 0.020     | 0.017     |
| 0.30     | 0.50     | 0.99        | 0.99     | -0.011   | -0.003   | 0.039         | 0.039     | 0.018     | 0.015     |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.35    | 0.60     | 0.99            | 0.99      | -0.007    | 0.000     | 0.037            | 0.037 | 0.019 | 0.019 |
| -0.40    | 0.60     | 0.99            | 0.99      | -0.005    | 0.000     | 0.038            | 0.038 | 0.022 | 0.017 |
| -0.45    | 0.60     | 0.99            | 0.99      | -0.003    | 0.000     | 0.038            | 0.038 | 0.017 | 0.017 |
| -0.50    | 0.60     | 0.99            | 0.99      | -0.006    | 0.000     | 0.038            | 0.038 | 0.021 | 0.017 |
| -0.55    | 0.60     | 0.99            | 0.99      | -0.007    | -0.001    | 0.036            | 0.036 | 0.020 | 0.016 |
| -0.60    | 0.60     | 0.99            | 0.99      | -0.002    | -0.001    | 0.035            | 0.035 | 0.018 | 0.016 |
| -0.65    | 0.60     | 1.00            | 1.00      | -0.004    | -0.002    | 0.035            | 0.035 | 0.021 | 0.017 |
| -0.70    | 0.60     | 1.00            | 1.00      | -0.002    | 0.000     | 0.036            | 0.037 | 0.020 | 0.016 |
| -0.75    | 0.60     | 1.00            | 1.00      | -0.001    | 0.000     | 0.034            | 0.034 | 0.019 | 0.017 |
| -0.80    | 0.60     | 1.00            | 1.00      | -0.002    | -0.002    | 0.030            | 0.030 | 0.018 | 0.015 |
| -0.30    | 0.70     | 1.00            | 1.00      | -0.001    | 0.000     | 0.036            | 0.036 | 0.019 | 0.016 |
| -0.35    | 0.70     | 1.00            | 1.00      | -0.005    | 0.003     | 0.036            | 0.036 | 0.022 | 0.014 |
| -0.40    | 0.70     | 1.00            | 1.00      | -0.006    | 0.002     | 0.035            | 0.035 | 0.021 | 0.017 |
| -0.45    | 0.70     | 1.00            | 1.00      | -0.006    | 0.005     | 0.035            | 0.035 | 0.020 | 0.015 |
| -0.50    | 0.70     | 1.00            | 1.00      | -0.008    | 0.000     | 0.035            | 0.035 | 0.020 | 0.017 |
| -0.55    | 0.70     | 1.00            | 1.00      | -0.006    | -0.002    | 0.035            | 0.035 | 0.019 | 0.017 |
| -0.60    | 0.70     | 1.00            | 1.00      | -0.005    | -0.001    | 0.038            | 0.038 | 0.021 | 0.018 |
| -0.65    | 0.70     | 1.00            | 1.00      | -0.005    | 0.000     | 0.036            | 0.036 | 0.021 | 0.016 |
| -0.70    | 0.70     | 1.00            | 1.00      | -0.007    | 0.001     | 0.036            | 0.036 | 0.020 | 0.016 |
| -0.75    | 0.70     | 0.99            | 0.99      | -0.006    | 0.000     | 0.035            | 0.035 | 0.020 | 0.017 |
| -0.80    | 0.70     | 0.99            | 0.99      | -0.005    | 0.000     | 0.039            | 0.039 | 0.019 | 0.016 |
| -0.25    | 0.70     | 1.00            | 1.00      | -0.005    | -0.004    | 0.035            | 0.035 | 0.020 | 0.017 |
| -0.20    | 0.70     | 0.99            | 0.99      | -0.005    | -0.007    | 0.036            | 0.036 | 0.020 | 0.017 |
| -0.15    | 0.70     | 0.99            | 0.99      | -0.006    | -0.010    | 0.034            | 0.034 | 0.019 | 0.018 |
| -0.10    | 0.70     | 0.98            | 0.98      | -0.008    | -0.014    | 0.033            | 0.033 | 0.023 | 0.020 |
| -0.05    | 0.70     | 0.96            | 0.96      | -0.006    | -0.013    | 0.028            | 0.028 | 0.024 | 0.021 |
| 0.00     | 0.70     | 0.94            | 0.94      | -0.008    | -0.005    | 0.034            | 0.034 | 0.026 | 0.024 |
| 0.10     | 0.70     | 0.92            | 0.92      | -0.008    | 0.007     | 0.033            | 0.033 | 0.024 | 0.021 |
| 0.20     | 0.70     | 0.94            | 0.93      | -0.008    | -0.011    | 0.032            | 0.032 | 0.019 | 0.019 |
| 0.30     | 0.70     | 0.94            | 0.94      | -0.012    | -0.009    | 0.021            | 0.021 | 0.020 | 0.014 |
| 0.40     | 0.70     | 0.95            | 0.95      | -0.011    | -0.007    | 0.024            | 0.024 | 0.020 | 0.016 |
| 0.45     | 0.70     | 0.95            | 0.94      | -0.011    | -0.009    | 0.024            | 0.024 | 0.010 | 0.018 |
| 0.50     | 0.70     | 0.95            | 0.95      | -0.012    | -0.012    | 0.027            | 0.027 | 0.020 | 0.024 |
| 0.55     | 0.70     | 0.95            | 0.95      | -0.010    | -0.011    | 0.026            | 0.026 | 0.019 | 0.017 |
| 0.60     | 0.70     | 0.95            | 0.95      | -0.008    | -0.010    | 0.028            | 0.028 | 0.020 | 0.016 |
| 0.65     | 0.70     | 0.95            | 0.95      | -0.011    | -0.009    | 0.027            | 0.027 | 0.019 | 0.017 |
| 0.70     | 0.70     | 0.95            | 0.95      | -0.011    | -0.008    | 0.027            | 0.027 | 0.021 | 0.017 |
| 0.75     | 0.70     | 0.95            | 0.95      | -0.007    | -0.009    | 0.029            | 0.029 | 0.020 | 0.018 |
| 0.80     | 0.70     | 0.95            | 0.95      | -0.006    | -0.007    | 0.029            | 0.029 | 0.022 | 0.017 |
| 0.80     | 0.00     | 0.95            | 0.95      | 0.002     | -0.008    | 0.029            | 0.029 | 0.071 | 0.018 |
| 0.75     | 0.00     | 0.95            | 0.95      | -0.005    | -0.005    | 0.030            | 0.030 | 0.020 | 0.018 |
| 0.70     | 0.80     | 0.95            | 0.95      | -0.008    | -0.008    | 0.031            | 0.031 | 0.019 | 0.017 |
| 0.65     | 0.80     | 0.95            | 0.95      | -0.011    | -0.008    | 0.029            | 0.029 | 0.019 | 0.013 |
| 0.60     | 0.80     | 0.95            | 0.95      | 0.015     | -0.011    | 0.029            | 0.029 | 0.020 | 0.017 |
| 0.55     | 0.80     | 0.95            | 0.95      | -0.018    | -0.010    | 0.027            | 0.029 | 0.020 | 0.016 |
| 0.50     | 0.80     | 0.94            | 0.94      | -0.014    | -0.012    | 0.027            | 0.028 | 0.017 | 0.017 |
| 0.45     | 0.80     | 0.94            | 0.94      | 0.014     | -0.011    | 0.027            | 0.027 | 0.018 | 0.017 |
| 0.40     | 0.80     | 0.95            | 0.95      | -0.013    | -0.007    | 0.028            | 0.028 | 0.020 | 0.017 |
| 0.30     | 0.80     | 0.95            | 0.95      | -0.011    | -0.008    | 0.027            | 0.027 | 0.019 | 0.017 |
| 0.20     | 0.80     | 0.94            | 0.94      | -0.007    | -0.010    | 0.033            | 0.033 | 0.018 | 0.019 |
| 0.10     | 0.80     | 0.90            | 0.90      | -0.008    | 0.003     | 0.029            | 0.029 | 0.023 | 0.020 |
| 0.00     | 0.80     | 0.91            | 0.91      | -0.012    | 0.002     | 0.024            | 0.024 | 0.023 | 0.019 |
| -0.05    | 0.80     | 0.93            | 0.93      | -0.015    | -0.007    | 0.020            | 0.020 | 0.022 | 0.016 |
| -0.10    | 0.80     | 0.94            | 0.94      | -0.014    | -0.008    | 0.027            | 0.022 | 0.023 | 0.016 |
| -0.15    | 0.80     | 0.94            | 0.94      | -0.011    | -0.009    | 0.025            | 0.025 | 0.021 | 0.017 |
| -0.20    | 0.80     | 0.94            | 0.94      | -0.006    | -0.010    | 0.028            | 0.028 | 0.017 | 0.017 |
| -0.25    | 0.80     | 0.95            | 0.95      | -0.007    | -0.006    | 0.030            | 0.030 | 0.020 | 0.018 |
| -0.30    | 0.80     | 0.95            | 0.95      | -0.003    | -0.002    | 0.032            | 0.032 | 0.019 | 0.018 |
| -0.35    | 0.80     | 0.97            | 0.97      | -0.005    | -0.003    | 0.035            | 0.035 | 0.020 | 0.018 |
| -0.40    | 0.80     | 0.99            | 0.99      | -0.006    | 0.002     | 0.034            | 0.034 | 0.020 | 0.018 |
| -0.45    | 0.80     | 1.00            | 1.00      | -0.004    | 0.005     | 0.031            | 0.031 | 0.021 | 0.015 |
| -0.50    | 0.80     | 1.00            | 1.00      | -0.007    | 0.005     | 0.029            | 0.029 | 0.022 | 0.016 |
| -0.55    | 0.80     | 0.99            | 0.99      | -0.004    | 0.002     | 0.032            | 0.032 | 0.017 | 0.016 |
| -0.60    | 0.80     | 1.00            | 1.00      | -0.004    | 0.004     | 0.034            | 0.034 | 0.019 | 0.016 |
| -0.65    | 0.80     | 1.00            | 1.00      | -0.005    | 0.004     | 0.028            | 0.028 | 0.020 | 0.017 |
| -0.70    | 0.80     | 1.00            | 1.00      | -0.002    | 0.004     | 0.029            | 0.029 | 0.019 | 0.019 |
| -0.75    | 0.80     | 1.00            | 1.00      | -0.001    | 0.005     | 0.029            | 0.029 | 0.019 | 0.016 |
| -0.80    | 0.80     | 1.00            | 1.00      | 0.004     | 0.003     | 0.026            | 0.026 | 0.018 | 0.015 |

Table D-2, Station 4,  $\theta = 0^\circ$ 

| $y$   | $z$   | $U_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.00  | 1.03      | 1.03      | -0.002    | -0.007    | 0.030      | 0.031 | 0.023 | 0.021 |
| 0.70  | 0.00  | 1.04      | 1.04      | -0.019    | -0.004    | 0.033      | 0.033 | 0.024 | 0.020 |
| 0.60  | 0.00  | 1.04      | 1.04      | -0.028    | -0.007    | 0.033      | 0.034 | 0.018 | 0.020 |
| 0.50  | 0.00  | 1.05      | 1.05      | -0.033    | -0.002    | 0.031      | 0.031 | 0.019 | 0.021 |
| 0.40  | 0.00  | 1.05      | 1.05      | -0.034    | -0.009    | 0.038      | 0.039 | 0.019 | 0.022 |
| 0.30  | 0.00  | 1.05      | 1.05      | -0.027    | -0.014    | 0.036      | 0.037 | 0.021 | 0.023 |
| 0.20  | 0.00  | 1.06      | 1.06      | -0.033    | -0.007    | 0.041      | 0.041 | 0.020 | 0.021 |
| 0.10  | 0.00  | 1.06      | 1.06      | -0.031    | -0.011    | 0.041      | 0.041 | 0.020 | 0.021 |
| 0.00  | 0.00  | 1.07      | 1.07      | -0.030    | -0.009    | 0.040      | 0.041 | 0.019 | 0.021 |
| -0.10 | 0.00  | 1.07      | 1.07      | -0.031    | -0.008    | 0.042      | 0.042 | 0.019 | 0.021 |
| -0.20 | 0.00  | 1.08      | 1.08      | -0.029    | -0.014    | 0.040      | 0.040 | 0.020 | 0.020 |
| -0.30 | 0.00  | 1.09      | 1.09      | -0.027    | -0.010    | 0.042      | 0.042 | 0.020 | 0.019 |
| -0.40 | 0.00  | 1.09      | 1.09      | -0.026    | -0.013    | 0.043      | 0.043 | 0.018 | 0.021 |
| -0.50 | 0.00  | 1.10      | 1.10      | -0.029    | -0.009    | 0.044      | 0.045 | 0.017 | 0.021 |
| -0.55 | 0.00  | 1.11      | 1.11      | -0.027    | -0.011    | 0.043      | 0.043 | 0.017 | 0.020 |
| -0.60 | 0.00  | 1.11      | 1.11      | -0.027    | -0.011    | 0.042      | 0.042 | 0.017 | 0.021 |
| -0.65 | 0.00  | 1.12      | 1.12      | -0.025    | -0.011    | 0.041      | 0.041 | 0.017 | 0.023 |
| -0.70 | 0.00  | 1.13      | 1.13      | -0.021    | -0.010    | 0.041      | 0.041 | 0.018 | 0.022 |
| -0.75 | 0.00  | 1.13      | 1.13      | -0.019    | -0.008    | 0.041      | 0.041 | 0.017 | 0.021 |
| -0.80 | 0.00  | 1.14      | 1.14      | -0.016    | -0.008    | 0.042      | 0.042 | 0.016 | 0.021 |
| -0.90 | -0.10 | 1.14      | 1.14      | -0.014    | -0.010    | 0.041      | 0.041 | 0.020 | 0.023 |
| -0.75 | -0.10 | 1.13      | 1.13      | -0.017    | -0.011    | 0.040      | 0.040 | 0.019 | 0.021 |
| -0.70 | -0.10 | 1.13      | 1.13      | -0.022    | -0.010    | 0.040      | 0.040 | 0.019 | 0.021 |
| -0.65 | -0.10 | 1.12      | 1.12      | -0.023    | -0.008    | 0.040      | 0.040 | 0.019 | 0.022 |
| -0.60 | -0.10 | 1.12      | 1.12      | -0.029    | -0.009    | 0.041      | 0.041 | 0.020 | 0.022 |
| -0.55 | -0.10 | 1.11      | 1.11      | -0.030    | -0.008    | 0.044      | 0.044 | 0.018 | 0.021 |
| -0.50 | -0.10 | 1.11      | 1.11      | -0.030    | -0.009    | 0.046      | 0.046 | 0.021 | 0.021 |
| -0.40 | -0.10 | 1.10      | 1.10      | -0.028    | -0.010    | 0.048      | 0.048 | 0.019 | 0.020 |
| -0.30 | -0.10 | 1.10      | 1.10      | -0.026    | -0.012    | 0.044      | 0.044 | 0.020 | 0.022 |
| -0.20 | -0.10 | 1.08      | 1.08      | -0.027    | -0.014    | 0.043      | 0.043 | 0.020 | 0.023 |
| -0.10 | -0.10 | 1.07      | 1.07      | -0.027    | -0.012    | 0.046      | 0.046 | 0.022 | 0.021 |
| 0.00  | 0.10  | 1.07      | 1.07      | -0.029    | -0.010    | 0.039      | 0.039 | 0.020 | 0.021 |
| 0.10  | -0.10 | 1.06      | 1.06      | -0.032    | -0.013    | 0.038      | 0.038 | 0.020 | 0.021 |
| 0.20  | -0.10 | 1.05      | 1.05      | -0.037    | -0.008    | 0.034      | 0.035 | 0.019 | 0.021 |
| 0.30  | -0.10 | 1.05      | 1.05      | -0.031    | -0.010    | 0.035      | 0.035 | 0.020 | 0.022 |
| 0.40  | -0.10 | 1.05      | 1.05      | -0.036    | -0.004    | 0.035      | 0.035 | 0.018 | 0.021 |
| 0.50  | -0.10 | 1.05      | 1.05      | -0.034    | -0.006    | 0.037      | 0.037 | 0.019 | 0.022 |
| 0.60  | -0.10 | 1.04      | 1.04      | -0.032    | -0.003    | 0.033      | 0.033 | 0.020 | 0.019 |
| 0.70  | -0.10 | 1.04      | 1.04      | -0.023    | -0.005    | 0.032      | 0.032 | 0.025 | 0.022 |
| 0.80  | -0.10 | 1.03      | 1.03      | -0.010    | -0.004    | 0.030      | 0.030 | 0.027 | 0.021 |
| 0.90  | -0.20 | 1.03      | 1.03      | -0.014    | -0.001    | 0.032      | 0.032 | 0.026 | 0.022 |
| 0.70  | -0.20 | 1.04      | 1.04      | -0.017    | -0.001    | 0.030      | 0.030 | 0.024 | 0.021 |
| 0.60  | -0.20 | 1.04      | 1.04      | -0.029    | -0.005    | 0.034      | 0.034 | 0.020 | 0.022 |
| 0.50  | -0.20 | 1.05      | 1.05      | -0.033    | -0.002    | 0.032      | 0.032 | 0.020 | 0.022 |
| 0.40  | -0.20 | 1.05      | 1.05      | -0.035    | -0.007    | 0.037      | 0.037 | 0.020 | 0.023 |
| 0.30  | -0.20 | 1.05      | 1.05      | -0.035    | -0.007    | 0.038      | 0.038 | 0.021 | 0.021 |
| 0.20  | -0.20 | 1.06      | 1.06      | -0.036    | -0.007    | 0.039      | 0.039 | 0.021 | 0.021 |
| 0.10  | -0.20 | 1.06      | 1.06      | -0.032    | -0.012    | 0.037      | 0.038 | 0.021 | 0.021 |
| 0.00  | -0.20 | 1.06      | 1.06      | -0.031    | -0.011    | 0.042      | 0.042 | 0.020 | 0.021 |
| -0.10 | -0.20 | 1.07      | 1.07      | -0.034    | -0.008    | 0.037      | 0.039 | 0.021 | 0.021 |
| -0.20 | -0.20 | 1.08      | 1.08      | -0.032    | -0.014    | 0.048      | 0.048 | 0.019 | 0.021 |
| -0.30 | -0.20 | 1.09      | 1.09      | -0.033    | -0.013    | 0.045      | 0.046 | 0.020 | 0.022 |
| -0.40 | -0.20 | 1.10      | 1.09      | -0.034    | -0.012    | 0.041      | 0.041 | 0.022 | 0.020 |
| -0.50 | -0.20 | 1.11      | 1.11      | -0.033    | -0.015    | 0.044      | 0.044 | 0.019 | 0.020 |
| -0.55 | -0.20 | 1.11      | 1.11      | -0.030    | -0.012    | 0.045      | 0.045 | 0.018 | 0.022 |
| -0.60 | -0.20 | 1.11      | 1.11      | -0.028    | -0.013    | 0.041      | 0.041 | 0.019 | 0.023 |
| -0.65 | -0.20 | 1.11      | 1.11      | -0.025    | -0.012    | 0.040      | 0.040 | 0.020 | 0.022 |
| -0.70 | -0.20 | 1.12      | 1.12      | -0.027    | -0.014    | 0.038      | 0.038 | 0.019 | 0.022 |
| -0.75 | -0.20 | 1.13      | 1.13      | -0.023    | -0.009    | 0.038      | 0.038 | 0.019 | 0.022 |
| -0.80 | -0.20 | 1.14      | 1.14      | -0.021    | -0.010    | 0.041      | 0.041 | 0.019 | 0.021 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.30 | 1.14            | 1.13      | -0.023    | -0.008    | 0.039      | 0.039 | 0.017 | 0.022 |
| -0.75 | -0.30 | 1.13            | 1.13      | -0.025    | -0.012    | 0.040      | 0.041 | 0.019 | 0.022 |
| -0.70 | -0.30 | 1.13            | 1.13      | -0.025    | -0.012    | 0.042      | 0.042 | 0.018 | 0.022 |
| -0.65 | -0.30 | 1.13            | 1.13      | -0.023    | -0.011    | 0.044      | 0.044 | 0.021 | 0.024 |
| -0.60 | -0.30 | 1.12            | 1.11      | -0.027    | -0.012    | 0.045      | 0.045 | 0.020 | 0.020 |
| -0.55 | -0.30 | 1.10            | 1.10      | -0.028    | -0.013    | 0.042      | 0.042 | 0.021 | 0.022 |
| -0.50 | -0.30 | 1.10            | 1.10      | -0.033    | -0.012    | 0.048      | 0.048 | 0.017 | 0.021 |
| -0.40 | -0.30 | 1.10            | 1.10      | -0.033    | -0.010    | 0.046      | 0.046 | 0.021 | 0.020 |
| -0.30 | -0.30 | 1.07            | 1.08      | -0.030    | -0.008    | 0.048      | 0.048 | 0.022 | 0.021 |
| -0.20 | -0.30 | 1.08            | 1.08      | -0.029    | -0.012    | 0.046      | 0.047 | 0.021 | 0.022 |
| -0.10 | -0.30 | 1.07            | 1.07      | -0.028    | -0.009    | 0.044      | 0.044 | 0.019 | 0.022 |
| 0.00  | -0.30 | 1.06            | 1.06      | -0.025    | -0.010    | 0.039      | 0.039 | 0.021 | 0.022 |
| 0.10  | -0.30 | 1.06            | 1.06      | -0.027    | -0.011    | 0.040      | 0.040 | 0.019 | 0.022 |
| 0.20  | -0.30 | 1.05            | 1.05      | -0.030    | -0.010    | 0.039      | 0.040 | 0.019 | 0.022 |
| 0.30  | -0.30 | 1.05            | 1.05      | -0.030    | -0.008    | 0.039      | 0.039 | 0.021 | 0.022 |
| 0.40  | -0.30 | 1.04            | 1.04      | -0.028    | -0.006    | 0.034      | 0.034 | 0.020 | 0.022 |
| 0.50  | -0.30 | 1.04            | 1.04      | -0.031    | 0.002     | 0.035      | 0.035 | 0.018 | 0.021 |
| 0.60  | -0.30 | 1.04            | 1.03      | -0.025    | -0.006    | 0.034      | 0.034 | 0.021 | 0.020 |
| 0.70  | -0.30 | 1.03            | 1.03      | -0.016    | -0.008    | 0.034      | 0.034 | 0.026 | 0.022 |
| 0.80  | -0.30 | 1.03            | 1.03      | -0.016    | -0.005    | 0.029      | 0.029 | 0.026 | 0.020 |
| 0.80  | -0.40 | 1.02            | 1.02      | -0.017    | -0.007    | 0.029      | 0.029 | 0.024 | 0.022 |
| 0.70  | -0.40 | 1.03            | 1.03      | -0.023    | -0.010    | 0.031      | 0.032 | 0.029 | 0.021 |
| 0.60  | -0.40 | 1.03            | 1.03      | -0.022    | -0.011    | 0.035      | 0.035 | 0.027 | 0.021 |
| 0.50  | -0.40 | 1.04            | 1.04      | -0.028    | -0.012    | 0.037      | 0.037 | 0.022 | 0.022 |
| 0.40  | -0.40 | 1.05            | 1.05      | -0.027    | -0.013    | 0.038      | 0.038 | 0.019 | 0.021 |
| 0.30  | -0.40 | 1.05            | 1.05      | -0.028    | -0.013    | 0.040      | 0.040 | 0.020 | 0.021 |
| 0.20  | -0.40 | 1.06            | 1.06      | -0.030    | -0.011    | 0.038      | 0.038 | 0.021 | 0.019 |
| 0.10  | -0.40 | 1.06            | 1.06      | -0.029    | -0.010    | 0.040      | 0.040 | 0.023 | 0.022 |
| 0.00  | -0.40 | 1.07            | 1.07      | -0.030    | -0.013    | 0.041      | 0.041 | 0.021 | 0.022 |
| -0.10 | -0.40 | 1.07            | 1.07      | -0.032    | -0.010    | 0.043      | 0.043 | 0.023 | 0.021 |
| -0.20 | -0.40 | 1.08            | 1.08      | -0.035    | -0.012    | 0.049      | 0.050 | 0.022 | 0.022 |
| -0.30 | -0.40 | 1.09            | 1.09      | -0.035    | -0.011    | 0.048      | 0.048 | 0.021 | 0.022 |
| -0.40 | -0.40 | 1.10            | 1.10      | -0.033    | -0.012    | 0.044      | 0.044 | 0.020 | 0.021 |
| -0.50 | -0.40 | 1.10            | 1.10      | -0.028    | -0.014    | 0.042      | 0.042 | 0.021 | 0.020 |
| -0.55 | -0.40 | 1.12            | 1.12      | -0.026    | -0.012    | 0.047      | 0.047 | 0.021 | 0.020 |
| -0.60 | -0.40 | 1.11            | 1.11      | -0.025    | -0.013    | 0.043      | 0.043 | 0.020 | 0.022 |
| -0.65 | -0.40 | 1.12            | 1.12      | -0.025    | -0.014    | 0.047      | 0.047 | 0.020 | 0.022 |
| -0.70 | -0.40 | 1.12            | 1.12      | -0.020    | -0.009    | 0.040      | 0.040 | 0.021 | 0.021 |
| -0.75 | -0.40 | 1.13            | 1.12      | -0.023    | -0.011    | 0.040      | 0.040 | 0.018 | 0.022 |
| -0.80 | -0.40 | 1.13            | 1.13      | -0.020    | -0.009    | 0.043      | 0.043 | 0.020 | 0.022 |
| -0.80 | -0.50 | 1.13            | 1.13      | -0.021    | -0.007    | 0.041      | 0.041 | 0.020 | 0.023 |
| -0.75 | -0.50 | 1.12            | 1.12      | -0.020    | -0.009    | 0.041      | 0.041 | 0.021 | 0.022 |
| -0.70 | -0.50 | 1.13            | 1.12      | -0.023    | -0.013    | 0.042      | 0.042 | 0.020 | 0.022 |
| -0.65 | -0.50 | 1.12            | 1.12      | -0.024    | -0.010    | 0.045      | 0.045 | 0.018 | 0.022 |
| -0.60 | -0.50 | 1.11            | 1.11      | -0.027    | -0.010    | 0.043      | 0.043 | 0.019 | 0.023 |
| -0.55 | -0.50 | 1.11            | 1.11      | -0.027    | -0.010    | 0.044      | 0.044 | 0.021 | 0.022 |
| -0.50 | -0.50 | 1.10            | 1.10      | -0.027    | -0.011    | 0.045      | 0.045 | 0.023 | 0.022 |
| -0.40 | -0.50 | 1.07            | 1.07      | -0.029    | -0.010    | 0.046      | 0.046 | 0.022 | 0.022 |
| -0.30 | -0.50 | 1.08            | 1.08      | -0.034    | -0.010    | 0.045      | 0.045 | 0.022 | 0.024 |
| -0.20 | -0.50 | 1.08            | 1.07      | -0.034    | -0.013    | 0.045      | 0.045 | 0.021 | 0.022 |
| -0.10 | -0.50 | 1.07            | 1.07      | -0.031    | -0.010    | 0.043      | 0.043 | 0.022 | 0.021 |
| 0.00  | -0.50 | 1.06            | 1.06      | -0.035    | -0.010    | 0.045      | 0.045 | 0.021 | 0.021 |
| 0.10  | -0.50 | 1.06            | 1.06      | -0.029    | -0.010    | 0.041      | 0.041 | 0.022 | 0.023 |
| 0.20  | -0.50 | 1.06            | 1.06      | -0.031    | -0.008    | 0.041      | 0.042 | 0.020 | 0.021 |
| 0.30  | -0.50 | 1.05            | 1.05      | -0.028    | -0.010    | 0.046      | 0.046 | 0.020 | 0.023 |
| 0.40  | -0.50 | 1.05            | 1.05      | -0.028    | -0.011    | 0.037      | 0.037 | 0.019 | 0.023 |
| 0.50  | -0.50 | 1.04            | 1.03      | -0.026    | -0.008    | 0.034      | 0.034 | 0.021 | 0.022 |
| 0.60  | -0.50 | 1.04            | 1.04      | -0.018    | -0.008    | 0.038      | 0.038 | 0.027 | 0.021 |
| 0.70  | -0.50 | 1.03            | 1.03      | -0.018    | -0.005    | 0.033      | 0.033 | 0.028 | 0.021 |
| 0.80  | -0.50 | 1.02            | 1.02      | -0.017    | -0.004    | 0.029      | 0.029 | 0.024 | 0.024 |

ORIGINAL PAGE IS  
OF POOR QUALITY

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>U'</u> | <u>V'</u> | <u>W'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.30     | -0.60    | 1.02        | 1.02     | -0.018   | -0.001   | 0.031         | 0.031     | 0.025     | 0.026     |
| 0.70     | -0.60    | 1.03        | 1.03     | -0.019   | -0.006   | 0.033         | 0.033     | 0.027     | 0.022     |
| 0.60     | -0.60    | 1.03        | 1.03     | -0.022   | -0.009   | 0.034         | 0.034     | 0.026     | 0.021     |
| 0.50     | -0.60    | 1.04        | 1.04     | -0.027   | -0.011   | 0.039         | 0.039     | 0.022     | 0.023     |
| 0.40     | -0.60    | 1.05        | 1.05     | -0.033   | -0.006   | 0.039         | 0.039     | 0.030     | 0.023     |
| 0.30     | -0.60    | 1.05        | 1.05     | -0.033   | -0.007   | 0.042         | 0.042     | 0.026     | 0.022     |
| 0.20     | -0.60    | 1.05        | 1.05     | -0.033   | -0.013   | 0.037         | 0.037     | 0.026     | 0.022     |
| 0.10     | -0.60    | 1.06        | 1.06     | -0.029   | -0.015   | 0.038         | 0.038     | 0.023     | 0.019     |
| 0.00     | -0.60    | 1.06        | 1.06     | -0.036   | -0.014   | 0.047         | 0.047     | 0.034     | 0.022     |
| -0.10    | -0.60    | 1.08        | 1.07     | -0.038   | -0.005   | 0.042         | 0.042     | 0.026     | 0.022     |
| -0.20    | -0.60    | 1.09        | 1.09     | -0.032   | -0.008   | 0.042         | 0.042     | 0.022     | 0.022     |
| -0.30    | -0.60    | 1.10        | 1.10     | -0.035   | -0.005   | 0.042         | 0.042     | 0.024     | 0.022     |
| -0.40    | -0.60    | 1.10        | 1.10     | -0.033   | -0.004   | 0.045         | 0.045     | 0.022     | 0.021     |
| -0.50    | -0.60    | 1.11        | 1.11     | -0.031   | -0.003   | 0.042         | 0.042     | 0.020     | 0.021     |
| -0.55    | -0.60    | 1.11        | 1.11     | -0.026   | -0.007   | 0.040         | 0.040     | 0.021     | 0.022     |
| -0.60    | -0.60    | 1.12        | 1.12     | -0.026   | -0.005   | 0.044         | 0.045     | 0.020     | 0.021     |
| -0.65    | -0.60    | 1.13        | 1.13     | -0.026   | -0.002   | 0.045         | 0.045     | 0.020     | 0.024     |
| -0.70    | -0.60    | 1.13        | 1.13     | -0.021   | -0.010   | 0.043         | 0.043     | 0.020     | 0.021     |
| -0.75    | -0.60    | 1.13        | 1.13     | -0.019   | -0.007   | 0.041         | 0.041     | 0.020     | 0.021     |
| -0.80    | -0.60    | 1.14        | 1.14     | -0.020   | -0.003   | 0.044         | 0.045     | 0.020     | 0.021     |
| -0.80    | -0.70    | 1.13        | 1.13     | -0.019   | -0.005   | 0.045         | 0.045     | 0.020     | 0.022     |
| -0.75    | -0.70    | 1.13        | 1.13     | -0.021   | -0.006   | 0.049         | 0.049     | 0.020     | 0.022     |
| -0.70    | -0.70    | 1.12        | 1.12     | -0.022   | -0.010   | 0.044         | 0.044     | 0.021     | 0.022     |
| 0.65     | -0.70    | 1.12        | 1.12     | -0.022   | -0.009   | 0.042         | 0.042     | 0.022     | 0.021     |
| -0.60    | -0.70    | 1.12        | 1.12     | -0.026   | -0.007   | 0.043         | 0.043     | 0.022     | 0.022     |
| -0.55    | -0.70    | 1.11        | 1.11     | -0.025   | -0.010   | 0.044         | 0.044     | 0.022     | 0.021     |
| -0.50    | -0.70    | 1.10        | 1.10     | -0.028   | -0.008   | 0.047         | 0.047     | 0.022     | 0.023     |
| -0.40    | -0.70    | 1.10        | 1.10     | -0.036   | -0.007   | 0.044         | 0.044     | 0.020     | 0.023     |
| -0.30    | -0.70    | 1.09        | 1.09     | -0.033   | -0.006   | 0.045         | 0.045     | 0.021     | 0.022     |
| -0.20    | 0.70     | 1.08        | 1.08     | -0.036   | -0.008   | 0.041         | 0.041     | 0.023     | 0.023     |
| -0.10    | -0.70    | 1.08        | 1.08     | -0.037   | -0.008   | 0.043         | 0.044     | 0.022     | 0.023     |
| 0.00     | -0.70    | 1.08        | 1.08     | -0.037   | -0.004   | 0.047         | 0.047     | 0.021     | 0.023     |
| 0.10     | -0.70    | 1.07        | 1.06     | -0.034   | -0.008   | 0.041         | 0.041     | 0.023     | 0.022     |
| 0.20     | -0.70    | 1.06        | 1.06     | -0.035   | -0.006   | 0.038         | 0.038     | 0.022     | 0.024     |
| 0.30     | -0.70    | 1.06        | 1.06     | -0.031   | -0.006   | 0.038         | 0.038     | 0.021     | 0.023     |
| 0.40     | -0.70    | 1.06        | 1.05     | -0.025   | -0.004   | 0.038         | 0.038     | 0.023     | 0.023     |
| 0.50     | -0.70    | 1.04        | 1.04     | -0.021   | -0.002   | 0.034         | 0.034     | 0.024     | 0.021     |
| 0.60     | -0.70    | 1.04        | 1.04     | -0.019   | -0.004   | 0.037         | 0.037     | 0.028     | 0.022     |
| 0.70     | -0.70    | 1.03        | 1.03     | -0.017   | -0.010   | 0.031         | 0.032     | 0.027     | 0.023     |
| 0.80     | -0.70    | 1.01        | 1.01     | -0.017   | -0.004   | 0.032         | 0.032     | 0.023     | 0.030     |
| 0.80     | -0.80    | 0.99        | 0.99     | -0.019   | -0.007   | 0.042         | 0.042     | 0.023     | 0.037     |
| 0.70     | -0.80    | 1.03        | 1.03     | -0.017   | -0.007   | 0.031         | 0.031     | 0.026     | 0.027     |
| 0.60     | -0.80    | 1.04        | 1.03     | -0.023   | -0.005   | 0.037         | 0.037     | 0.030     | 0.024     |
| 0.50     | -0.80    | 1.04        | 1.04     | -0.020   | -0.002   | 0.038         | 0.038     | 0.029     | 0.021     |
| 0.40     | -0.80    | 1.05        | 1.04     | -0.028   | -0.003   | 0.038         | 0.038     | 0.023     | 0.022     |
| 0.30     | -0.80    | 1.05        | 1.05     | -0.032   | -0.008   | 0.042         | 0.042     | 0.023     | 0.024     |
| 0.20     | -0.80    | 1.05        | 1.05     | -0.036   | -0.007   | 0.040         | 0.041     | 0.022     | 0.022     |
| 0.10     | -0.80    | 1.06        | 1.06     | -0.038   | -0.008   | 0.040         | 0.041     | 0.021     | 0.023     |
| 0.00     | -0.80    | 1.07        | 1.07     | -0.037   | -0.010   | 0.048         | 0.048     | 0.024     | 0.023     |
| -0.10    | -0.80    | 1.07        | 1.07     | -0.037   | -0.008   | 0.044         | 0.044     | 0.024     | 0.023     |
| -0.20    | -0.80    | 1.08        | 1.08     | -0.038   | -0.003   | 0.044         | 0.044     | 0.021     | 0.022     |
| -0.30    | -0.80    | 1.09        | 1.09     | -0.034   | -0.008   | 0.040         | 0.041     | 0.023     | 0.021     |
| -0.40    | -0.80    | 1.09        | 1.09     | -0.033   | -0.005   | 0.044         | 0.044     | 0.021     | 0.022     |
| -0.50    | -0.80    | 1.10        | 1.10     | -0.027   | -0.006   | 0.044         | 0.045     | 0.022     | 0.021     |
| -0.55    | -0.80    | 1.11        | 1.11     | -0.026   | -0.010   | 0.044         | 0.044     | 0.022     | 0.021     |
| -0.60    | -0.80    | 1.11        | 1.11     | -0.028   | -0.011   | 0.043         | 0.043     | 0.019     | 0.022     |
| -0.65    | -0.80    | 1.11        | 1.11     | -0.026   | -0.008   | 0.049         | 0.049     | 0.026     | 0.022     |
| -0.70    | -0.80    | 1.12        | 1.11     | -0.023   | -0.008   | 0.043         | 0.044     | 0.020     | 0.021     |
| -0.75    | -0.80    | 1.12        | 1.12     | -0.020   | -0.005   | 0.044         | 0.044     | 0.017     | 0.022     |
| -0.80    | -0.80    | 1.13        | 1.13     | -0.019   | -0.002   | 0.041         | 0.041     | 0.022     | 0.022     |

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80    | -0.90    | 1.11            | 1.11      | -0.019    | 0.001     | 0.053      | 0.053 | 0.032 | 0.030 |
| -0.75    | -0.90    | 1.11            | 1.11      | -0.028    | 0.003     | 0.051      | 0.051 | 0.028 | 0.028 |
| -0.70    | -0.90    | 1.11            | 1.11      | -0.028    | 0.000     | 0.045      | 0.045 | 0.030 | 0.025 |
| -0.65    | -0.90    | 1.11            | 1.11      | -0.029    | -0.003    | 0.046      | 0.046 | 0.028 | 0.026 |
| -0.60    | -0.90    | 1.12            | 1.12      | -0.035    | -0.003    | 0.042      | 0.043 | 0.024 | 0.022 |
| -0.55    | -0.90    | 1.11            | 1.11      | -0.037    | -0.004    | 0.044      | 0.044 | 0.024 | 0.023 |
| -0.50    | -0.90    | 1.11            | 1.11      | -0.035    | -0.001    | 0.042      | 0.043 | 0.024 | 0.021 |
| -0.40    | -0.90    | 1.07            | 1.09      | -0.036    | -0.002    | 0.042      | 0.042 | 0.024 | 0.024 |
| -0.30    | -0.90    | 1.09            | 1.09      | -0.038    | 0.000     | 0.040      | 0.040 | 0.025 | 0.021 |
| -0.20    | -0.90    | 1.09            | 1.08      | -0.042    | 0.004     | 0.038      | 0.038 | 0.024 | 0.022 |
| -0.10    | -0.90    | 1.08            | 1.07      | -0.036    | -0.001    | 0.041      | 0.041 | 0.023 | 0.021 |
| 0.00     | -0.90    | 1.07            | 1.07      | -0.039    | 0.001     | 0.035      | 0.035 | 0.022 | 0.022 |
| 0.10     | -0.90    | 1.07            | 1.07      | -0.044    | 0.006     | 0.036      | 0.036 | 0.023 | 0.019 |
| 0.20     | -0.90    | 1.06            | 1.06      | -0.048    | 0.010     | 0.052      | 0.044 | 0.071 | 0.165 |
| 0.30     | -0.90    | 1.06            | 1.06      | -0.042    | 0.014     | 0.032      | 0.030 | 0.023 | 0.048 |
| 0.40     | -0.90    | 1.04            | 1.03      | -0.030    | 0.014     | 0.035      | 0.036 | 0.022 | 0.050 |
| 0.50     | -0.90    | 1.03            | 1.02      | -0.029    | 0.002     | 0.036      | 0.036 | 0.032 | 0.027 |
| 0.60     | -0.90    | 0.99            | 0.99      | -0.029    | 0.004     | 0.054      | 0.054 | 0.029 | 0.033 |
| 0.70     | -0.90    | 0.97            | 0.97      | -0.024    | -0.003    | 0.058      | 0.058 | 0.029 | 0.036 |
| 0.80     | -0.90    | 0.92            | 0.92      | -0.012    | -0.007    | 0.067      | 0.067 | 0.026 | 0.041 |
| -0.80    | -0.75    | 0.99            | 0.98      | -0.023    | 0.006     | 0.058      | 0.058 | 0.056 | 0.030 |
| -0.75    | -0.75    | 0.99            | 0.98      | -0.032    | 0.008     | 0.065      | 0.064 | 0.046 | 0.040 |
| -0.70    | -0.75    | 0.98            | 0.98      | -0.021    | 0.001     | 0.066      | 0.066 | 0.045 | 0.045 |
| -0.65    | -0.75    | 1.01            | 1.01      | -0.042    | -0.006    | 0.066      | 0.066 | 0.044 | 0.036 |
| -0.60    | -0.75    | 1.00            | 1.00      | -0.026    | 0.000     | 0.074      | 0.074 | 0.042 | 0.037 |
| -0.55    | -0.75    | 1.00            | 1.00      | -0.037    | 0.003     | 0.072      | 0.073 | 0.040 | 0.043 |
| -0.50    | -0.75    | 1.00            | 1.00      | -0.044    | 0.006     | 0.076      | 0.076 | 0.039 | 0.035 |
| -0.40    | -0.75    | 1.00            | 1.00      | 0.000     | 0.003     | 0.070      | 0.070 | 0.007 | 0.044 |
| -0.30    | -0.75    | 0.98            | 0.98      | -0.049    | 0.002     | 0.066      | 0.066 | 0.030 | 0.038 |
| -0.20    | -0.75    | 0.99            | 0.99      | -0.057    | 0.003     | 0.086      | 0.086 | 0.042 | 0.034 |
| -0.10    | -0.75    | 1.00            | 1.00      | -0.060    | -0.003    | 0.062      | 0.063 | 0.034 | 0.043 |
| 0.00     | -0.75    | 0.96            | 0.96      | -0.058    | 0.009     | 0.075      | 0.076 | 0.049 | 0.044 |
| 0.10     | -0.75    | 0.93            | 0.98      | -0.055    | 0.010     | 0.070      | 0.070 | 0.042 | 0.034 |
| 0.20     | -0.75    | 0.98            | 0.97      | -0.062    | 0.006     | 0.057      | 0.057 | 0.041 | 0.032 |
| 0.30     | -0.75    | 0.92            | 0.91      | -0.057    | 0.003     | 0.079      | 0.077 | 0.045 | 0.038 |
| 0.40     | -0.75    | 0.90            | 0.89      | -0.033    | 0.013     | 0.077      | 0.078 | 0.032 | 0.046 |
| 0.50     | -0.75    | 0.86            | 0.86      | -0.028    | 0.021     | 0.065      | 0.066 | 0.026 | 0.047 |
| 0.60     | -0.75    | 0.85            | 0.84      | -0.034    | 0.011     | 0.078      | 0.079 | 0.016 | 0.050 |
| 0.70     | -0.75    | 0.75            | 0.75      | -0.032    | 0.008     | 0.103      | 0.104 | 0.034 | 0.055 |
| 0.80     | -0.75    | 0.77            | 0.77      | -0.015    | -0.006    | 0.096      | 0.096 | 0.031 | 0.046 |
| -0.80    | -0.60    | 0.93            | 0.93      | -0.018    | 0.010     | 0.071      | 0.071 | 0.058 | 0.036 |
| -0.75    | -0.60    | 0.94            | 0.93      | -0.020    | 0.009     | 0.073      | 0.073 | 0.037 | 0.055 |
| -0.70    | -0.60    | 0.96            | 0.95      | -0.038    | 0.003     | 0.080      | 0.080 | 0.041 | 0.045 |
| -0.65    | -0.60    | 0.96            | 0.96      | -0.028    | 0.012     | 0.074      | 0.074 | 0.043 | 0.041 |
| -0.60    | -0.60    | 0.94            | 0.94      | -0.041    | 0.007     | 0.066      | 0.065 | 0.040 | 0.049 |
| -0.55    | -0.60    | 0.93            | 0.93      | -0.033    | 0.009     | 0.081      | 0.081 | 0.053 | 0.040 |
| -0.50    | -0.60    | 0.97            | 0.96      | -0.047    | -0.004    | 0.073      | 0.073 | 0.042 | 0.044 |
| -0.40    | -0.60    | 0.98            | 0.97      | -0.038    | 0.000     | 0.061      | 0.061 | 0.042 | 0.040 |
| -0.30    | -0.60    | 0.96            | 0.95      | -0.052    | -0.001    | 0.090      | 0.090 | 0.058 | 0.042 |
| -0.20    | -0.60    | 0.94            | 0.94      | -0.041    | 0.010     | 0.062      | 0.063 | 0.047 | 0.036 |
| -0.10    | -0.60    | 0.94            | 0.93      | -0.065    | 0.003     | 0.078      | 0.077 | 0.043 | 0.039 |
| 0.00     | -0.60    | 0.91            | 0.91      | -0.044    | -0.002    | 0.072      | 0.072 | 0.048 | 0.034 |
| 0.10     | -0.60    | 0.89            | 0.88      | -0.034    | 0.008     | 0.081      | 0.082 | 0.047 | 0.043 |
| 0.20     | -0.60    | 0.88            | 0.88      | -0.046    | -0.005    | 0.100      | 0.100 | 0.044 | 0.035 |
| 0.30     | -0.60    | 0.88            | 0.87      | -0.042    | 0.006     | 0.090      | 0.090 | 0.039 | 0.037 |
| 0.40     | -0.60    | 0.82            | 0.82      | -0.036    | 0.012     | 0.082      | 0.083 | 0.023 | 0.051 |
| 0.50     | -0.60    | 0.81            | 0.81      | -0.030    | 0.004     | 0.090      | 0.090 | 0.021 | 0.042 |
| 0.60     | -0.60    | 0.81            | 0.80      | -0.018    | 0.004     | 0.096      | 0.096 | 0.017 | 0.125 |
| 0.70     | -0.60    | 0.73            | 0.73      | -0.025    | 0.004     | 0.102      | 0.103 | 0.032 | 0.047 |
| 0.80     | -0.60    | 0.72            | 0.72      | -0.015    | 0.007     | 0.100      | 0.100 | 0.036 | 0.054 |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.70  | 0.00 | 1.03            | 1.02      | -0.019    | -0.004    | 0.031            | 0.031 | 0.022 | 0.020 |
| 0.60  | 0.00 | 1.03            | 1.03      | -0.025    | -0.005    | 0.030            | 0.030 | 0.017 | 0.019 |
| 0.50  | 0.00 | 1.04            | 1.04      | -0.030    | -0.007    | 0.035            | 0.035 | 0.019 | 0.020 |
| 0.40  | 0.00 | 1.04            | 1.04      | -0.032    | -0.006    | 0.033            | 0.033 | 0.019 | 0.019 |
| 0.30  | 0.00 | 1.05            | 1.05      | -0.035    | -0.007    | 0.039            | 0.039 | 0.020 | 0.020 |
| 0.20  | 0.00 | 1.06            | 1.05      | -0.036    | -0.006    | 0.038            | 0.038 | 0.019 | 0.021 |
| 0.10  | 0.00 | 1.06            | 1.06      | -0.038    | -0.009    | 0.037            | 0.037 | 0.019 | 0.021 |
| 0.00  | 0.00 | 1.07            | 1.07      | -0.041    | -0.010    | 0.040            | 0.040 | 0.021 | 0.021 |
| -0.10 | 0.00 | 1.07            | 1.07      | -0.040    | -0.007    | 0.038            | 0.038 | 0.020 | 0.021 |
| -0.20 | 0.00 | 1.09            | 1.08      | -0.042    | -0.010    | 0.042            | 0.043 | 0.019 | 0.020 |
| -0.30 | 0.00 | 1.08            | 1.08      | -0.037    | -0.012    | 0.041            | 0.041 | 0.020 | 0.021 |
| -0.40 | 0.00 | 1.09            | 1.09      | -0.033    | -0.009    | 0.039            | 0.039 | 0.021 | 0.021 |
| -0.50 | 0.00 | 1.10            | 1.10      | -0.032    | -0.011    | 0.046            | 0.046 | 0.019 | 0.021 |
| -0.55 | 0.00 | 1.10            | 1.10      | -0.031    | -0.008    | 0.041            | 0.041 | 0.021 | 0.021 |
| -0.60 | 0.00 | 1.11            | 1.11      | -0.030    | -0.007    | 0.043            | 0.043 | 0.017 | 0.022 |
| -0.65 | 0.00 | 1.11            | 1.11      | -0.027    | -0.009    | 0.042            | 0.042 | 0.020 | 0.021 |
| -0.70 | 0.00 | 1.12            | 1.12      | -0.026    | -0.008    | 0.041            | 0.041 | 0.018 | 0.020 |
| -0.75 | 0.00 | 1.12            | 1.12      | -0.022    | -0.007    | 0.038            | 0.038 | 0.019 | 0.021 |
| -0.80 | 0.00 | 1.13            | 1.13      | -0.015    | -0.003    | 0.036            | 0.036 | 0.019 | 0.021 |
| -0.80 | 0.10 | 1.12            | 1.12      | -0.016    | -0.005    | 0.043            | 0.043 | 0.018 | 0.021 |
| -0.75 | 0.10 | 1.12            | 1.12      | -0.017    | -0.007    | 0.040            | 0.040 | 0.018 | 0.021 |
| -0.70 | 0.10 | 1.11            | 1.11      | -0.020    | -0.007    | 0.041            | 0.041 | 0.019 | 0.022 |
| -0.65 | 0.10 | 1.11            | 1.11      | -0.024    | -0.009    | 0.040            | 0.041 | 0.018 | 0.020 |
| -0.60 | 0.10 | 1.11            | 1.11      | -0.030    | -0.007    | 0.041            | 0.041 | 0.018 | 0.022 |
| -0.55 | 0.10 | 1.10            | 1.10      | -0.028    | -0.007    | 0.043            | 0.044 | 0.017 | 0.022 |
| -0.50 | 0.10 | 1.10            | 1.10      | -0.028    | -0.008    | 0.042            | 0.042 | 0.020 | 0.020 |
| -0.40 | 0.10 | 1.07            | 1.09      | -0.035    | -0.009    | 0.041            | 0.041 | 0.018 | 0.020 |
| -0.30 | 0.10 | 1.07            | 1.09      | -0.038    | -0.008    | 0.043            | 0.043 | 0.019 | 0.021 |
| -0.20 | 0.10 | 1.08            | 1.08      | -0.039    | -0.009    | 0.040            | 0.041 | 0.019 | 0.020 |
| -0.10 | 0.10 | 1.07            | 1.07      | -0.041    | -0.008    | 0.042            | 0.042 | 0.020 | 0.023 |
| 0.00  | 0.10 | 1.06            | 1.06      | -0.039    | -0.007    | 0.039            | 0.039 | 0.018 | 0.022 |
| 0.10  | 0.10 | 1.07            | 1.07      | -0.037    | -0.009    | 0.037            | 0.037 | 0.019 | 0.021 |
| 0.20  | 0.10 | 1.08            | 1.08      | -0.037    | -0.006    | 0.038            | 0.038 | 0.020 | 0.020 |
| 0.30  | 0.10 | 1.05            | 1.05      | -0.036    | -0.007    | 0.032            | 0.032 | 0.020 | 0.020 |
| 0.40  | 0.10 | 1.04            | 1.04      | -0.032    | -0.007    | 0.033            | 0.033 | 0.019 | 0.021 |
| 0.50  | 0.10 | 1.04            | 1.04      | -0.027    | -0.006    | 0.032            | 0.033 | 0.019 | 0.022 |
| 0.60  | 0.10 | 1.04            | 1.03      | -0.028    | -0.004    | 0.036            | 0.036 | 0.017 | 0.020 |
| 0.70  | 0.10 | 1.03            | 1.03      | -0.021    | -0.006    | 0.031            | 0.032 | 0.022 | 0.023 |
| 0.80  | 0.10 | 1.02            | 1.02      | -0.014    | -0.001    | 0.029            | 0.029 | 0.023 | 0.021 |
| 0.80  | 0.20 | 1.02            | 1.02      | -0.019    | 0.001     | 0.030            | 0.030 | 0.024 | 0.020 |
| 0.70  | 0.20 | 1.03            | 1.03      | -0.024    | -0.002    | 0.034            | 0.034 | 0.018 | 0.020 |
| 0.60  | 0.20 | 1.03            | 1.03      | -0.029    | -0.003    | 0.034            | 0.034 | 0.019 | 0.020 |
| 0.50  | 0.20 | 1.04            | 1.04      | -0.032    | -0.004    | 0.033            | 0.033 | 0.019 | 0.020 |
| 0.40  | 0.20 | 1.04            | 1.04      | -0.036    | -0.006    | 0.033            | 0.032 | 0.019 | 0.021 |
| 0.30  | 0.20 | 1.05            | 1.05      | -0.042    | -0.007    | 0.039            | 0.040 | 0.020 | 0.021 |
| 0.20  | 0.20 | 1.06            | 1.06      | -0.040    | -0.008    | 0.039            | 0.040 | 0.019 | 0.021 |
| 0.10  | 0.20 | 1.05            | 1.06      | -0.043    | -0.006    | 0.038            | 0.038 | 0.021 | 0.022 |
| 0.00  | 0.20 | 1.07            | 1.07      | -0.045    | -0.008    | 0.030            | 0.030 | 0.022 | 0.022 |
| -0.10 | 0.20 | 1.08            | 1.08      | -0.044    | -0.009    | 0.041            | 0.041 | 0.021 | 0.020 |
| -0.20 | 0.20 | 1.09            | 1.09      | -0.039    | -0.007    | 0.043            | 0.043 | 0.021 | 0.021 |
| -0.30 | 0.20 | 1.07            | 1.09      | -0.042    | -0.009    | 0.038            | 0.038 | 0.020 | 0.020 |
| -0.40 | 0.20 | 1.10            | 1.10      | -0.035    | -0.007    | 0.041            | 0.041 | 0.021 | 0.021 |
| -0.50 | 0.20 | 1.11            | 1.11      | -0.034    | -0.006    | 0.043            | 0.043 | 0.021 | 0.021 |
| -0.55 | 0.20 | 1.12            | 1.12      | -0.032    | -0.007    | 0.044            | 0.044 | 0.020 | 0.021 |
| -0.60 | 0.20 | 1.12            | 1.12      | -0.028    | -0.009    | 0.042            | 0.042 | 0.020 | 0.021 |
| -0.65 | 0.20 | 1.13            | 1.13      | -0.026    | -0.010    | 0.041            | 0.041 | 0.020 | 0.021 |
| -0.70 | 0.20 | 1.13            | 1.13      | -0.024    | -0.006    | 0.042            | 0.042 | 0.021 | 0.021 |
| -0.75 | 0.20 | 1.13            | 1.13      | -0.022    | -0.005    | 0.044            | 0.044 | 0.018 | 0.020 |
| -0.80 | 0.20 | 1.14            | 1.14      | -0.030    | -0.001    | 0.040            | 0.040 | 0.074 | 0.017 |
| -0.80 | 0.30 | 1.14            | 1.14      | -0.013    | -0.002    | 0.041            | 0.041 | 0.017 | 0.021 |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.75 | 0.30 | 1.13            | 1.13      | -0.016    | -0.002    | 0.039            | 0.039 | 0.018 | 0.020 |
| -0.70 | 0.30 | 1.13            | 1.13      | -0.024    | -0.007    | 0.038            | 0.038 | 0.018 | 0.021 |
| -0.65 | 0.30 | 1.12            | 1.12      | -0.027    | -0.007    | 0.039            | 0.039 | 0.019 | 0.023 |
| -0.60 | 0.30 | 1.12            | 1.12      | -0.029    | -0.007    | 0.040            | 0.040 | 0.019 | 0.023 |
| -0.55 | 0.30 | 1.11            | 1.11      | -0.033    | -0.004    | 0.040            | 0.040 | 0.019 | 0.023 |
| -0.50 | 0.30 | 1.11            | 1.11      | -0.033    | -0.007    | 0.040            | 0.040 | 0.020 | 0.022 |
| -0.40 | 0.30 | 1.10            | 1.10      | -0.038    | -0.006    | 0.040            | 0.040 | 0.020 | 0.022 |
| -0.30 | 0.30 | 1.09            | 1.09      | -0.041    | -0.007    | 0.041            | 0.041 | 0.021 | 0.023 |
| -0.20 | 0.30 | 1.09            | 1.09      | -0.044    | -0.007    | 0.042            | 0.043 | 0.021 | 0.022 |
| -0.10 | 0.30 | 1.08            | 1.08      | -0.041    | -0.005    | 0.039            | 0.039 | 0.021 | 0.021 |
| 0.00  | 0.30 | 1.07            | 1.07      | -0.046    | -0.007    | 0.039            | 0.040 | 0.021 | 0.022 |
| 0.10  | 0.30 | 1.06            | 1.06      | -0.044    | -0.003    | 0.041            | 0.041 | 0.022 | 0.022 |
| 0.20  | 0.30 | 1.05            | 1.05      | -0.048    | -0.006    | 0.037            | 0.037 | 0.019 | 0.021 |
| 0.30  | 0.30 | 1.05            | 1.05      | -0.041    | -0.006    | 0.037            | 0.037 | 0.021 | 0.021 |
| 0.40  | 0.30 | 1.04            | 1.04      | -0.040    | -0.005    | 0.034            | 0.035 | 0.019 | 0.020 |
| 0.50  | 0.30 | 1.04            | 1.04      | -0.035    | -0.004    | 0.034            | 0.034 | 0.017 | 0.020 |
| 0.60  | 0.30 | 1.03            | 1.03      | -0.034    | -0.002    | 0.034            | 0.034 | 0.017 | 0.019 |
| 0.70  | 0.30 | 1.03            | 1.03      | -0.027    | -0.003    | 0.031            | 0.031 | 0.016 | 0.019 |
| 0.80  | 0.30 | 1.02            | 1.02      | -0.014    | -0.002    | 0.029            | 0.029 | 0.023 | 0.021 |
| 0.80  | 0.40 | 1.02            | 1.02      | -0.019    | -0.009    | 0.038            | 0.039 | 0.017 | 0.023 |
| 0.70  | 0.40 | 1.02            | 1.02      | -0.027    | -0.002    | 0.039            | 0.039 | 0.017 | 0.021 |
| 0.60  | 0.40 | 1.03            | 1.03      | -0.032    | -0.001    | 0.038            | 0.039 | 0.018 | 0.019 |
| 0.50  | 0.40 | 1.04            | 1.04      | -0.039    | -0.004    | 0.035            | 0.035 | 0.018 | 0.021 |
| 0.40  | 0.40 | 1.05            | 1.05      | -0.044    | -0.007    | 0.035            | 0.035 | 0.017 | 0.020 |
| 0.30  | 0.40 | 1.05            | 1.05      | -0.049    | -0.005    | 0.035            | 0.035 | 0.018 | 0.019 |
| 0.20  | 0.40 | 1.06            | 1.06      | -0.049    | -0.005    | 0.036            | 0.036 | 0.020 | 0.019 |
| 0.10  | 0.40 | 1.06            | 1.06      | -0.054    | -0.006    | 0.037            | 0.036 | 0.019 | 0.027 |
| 0.00  | 0.40 | 1.07            | 1.07      | -0.051    | -0.004    | 0.039            | 0.039 | 0.019 | 0.020 |
| -0.10 | 0.40 | 1.08            | 1.08      | -0.045    | -0.005    | 0.039            | 0.039 | 0.021 | 0.022 |
| -0.20 | 0.40 | 1.09            | 1.09      | -0.046    | -0.006    | 0.044            | 0.044 | 0.023 | 0.022 |
| -0.30 | 0.40 | 1.10            | 1.09      | -0.042    | -0.005    | 0.042            | 0.042 | 0.019 | 0.020 |
| -0.40 | 0.40 | 1.10            | 1.10      | -0.038    | -0.003    | 0.040            | 0.040 | 0.020 | 0.021 |
| -0.50 | 0.40 | 1.11            | 1.11      | -0.040    | -0.007    | 0.039            | 0.040 | 0.019 | 0.021 |
| -0.55 | 0.40 | 1.12            | 1.11      | -0.075    | -0.005    | 0.041            | 0.041 | 0.020 | 0.020 |
| -0.60 | 0.40 | 1.12            | 1.12      | -0.075    | -0.007    | 0.040            | 0.040 | 0.019 | 0.021 |
| -0.65 | 0.40 | 1.13            | 1.13      | -0.034    | 0.000     | 0.042            | 0.042 | 0.019 | 0.019 |
| -0.70 | 0.40 | 1.12            | 1.12      | -0.028    | -0.004    | 0.040            | 0.040 | 0.017 | 0.019 |
| -0.75 | 0.40 | 1.13            | 1.13      | -0.024    | -0.001    | 0.041            | 0.041 | 0.017 | 0.018 |
| -0.80 | 0.40 | 1.14            | 1.14      | -0.018    | 0.000     | 0.040            | 0.040 | 0.017 | 0.013 |
| -0.80 | 0.50 | 1.14            | 1.14      | -0.015    | 0.000     | 0.041            | 0.041 | 0.016 | 0.020 |
| -0.75 | 0.50 | 1.14            | 1.13      | -0.022    | 0.000     | 0.042            | 0.042 | 0.016 | 0.019 |
| -0.70 | 0.50 | 1.13            | 1.13      | -0.030    | -0.003    | 0.040            | 0.040 | 0.017 | 0.019 |
| -0.65 | 0.50 | 1.12            | 1.12      | -0.031    | -0.003    | 0.039            | 0.039 | 0.018 | 0.019 |
| -0.60 | 0.50 | 1.12            | 1.12      | -0.036    | -0.004    | 0.035            | 0.035 | 0.017 | 0.020 |
| -0.55 | 0.50 | 1.12            | 1.12      | -0.037    | -0.002    | 0.039            | 0.039 | 0.018 | 0.021 |
| -0.50 | 0.50 | 1.11            | 1.11      | -0.041    | -0.003    | 0.039            | 0.039 | 0.020 | 0.020 |
| -0.40 | 0.50 | 1.10            | 1.10      | -0.038    | -0.002    | 0.038            | 0.038 | 0.017 | 0.019 |
| -0.30 | 0.50 | 1.10            | 1.10      | -0.044    | -0.001    | 0.035            | 0.035 | 0.019 | 0.017 |
| -0.20 | 0.50 | 1.09            | 1.09      | -0.044    | 0.000     | 0.038            | 0.038 | 0.019 | 0.020 |
| -0.10 | 0.50 | 1.08            | 1.08      | -0.047    | 0.001     | 0.038            | 0.038 | 0.018 | 0.020 |
| 0.00  | 0.50 | 1.07            | 1.07      | -0.052    | 0.000     | 0.038            | 0.038 | 0.019 | 0.019 |
| 0.10  | 0.50 | 1.07            | 1.06      | -0.053    | -0.003    | 0.036            | 0.036 | 0.018 | 0.020 |
| 0.20  | 0.50 | 1.06            | 1.06      | -0.052    | -0.001    | 0.036            | 0.036 | 0.018 | 0.020 |
| 0.30  | 0.50 | 1.06            | 1.06      | -0.051    | -0.002    | 0.035            | 0.035 | 0.018 | 0.019 |
| 0.40  | 0.50 | 1.04            | 1.04      | -0.043    | -0.003    | 0.044            | 0.044 | 0.018 | 0.020 |
| 0.50  | 0.50 | 1.03            | 1.03      | -0.040    | -0.005    | 0.044            | 0.044 | 0.018 | 0.021 |
| 0.60  | 0.50 | 1.02            | 1.02      | -0.034    | -0.006    | 0.044            | 0.044 | 0.016 | 0.020 |
| 0.70  | 0.50 | 1.01            | 1.01      | -0.028    | 0.000     | 0.052            | 0.052 | 0.017 | 0.018 |
| 0.80  | 0.50 | 0.97            | 0.97      | -0.020    | -0.004    | 0.024            | 0.024 | 0.017 | 0.019 |
| 0.80  | 0.60 | 0.97            | 0.97      | -0.020    | -0.006    | 0.026            | 0.026 | 0.015 | 0.022 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| $y$   | $z$  | Units | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'$ rms | $u'$  | $v'$  | $w'$  |
|-------|------|-------|-----------|-----------|-----------|----------|-------|-------|-------|
| 0.70  | 0.70 | 0.70  | 0.78      | -0.031    | -0.002    | 0.020    | 0.020 | 0.018 | 0.018 |
| 0.60  | 0.60 | 0.98  | 0.70      | -0.035    | -0.003    | 0.029    | 0.029 | 0.019 | 0.018 |
| 0.50  | 0.60 | 0.93  | 0.70      | -0.040    | -0.006    | 0.027    | 0.027 | 0.018 | 0.020 |
| 0.40  | 0.60 | 1.01  | 1.01      | -0.047    | -0.008    | 0.045    | 0.045 | 0.016 | 0.022 |
| 0.30  | 0.60 | 1.04  | 1.03      | -0.052    | -0.008    | 0.046    | 0.046 | 0.017 | 0.022 |
| 0.20  | 0.60 | 1.06  | 1.05      | -0.054    | -0.002    | 0.046    | 0.046 | 0.018 | 0.020 |
| 0.10  | 0.60 | 1.06  | 1.06      | -0.055    | 0.000     | 0.042    | 0.042 | 0.019 | 0.017 |
| 0.00  | 0.60 | 1.08  | 1.07      | -0.052    | -0.002    | 0.036    | 0.037 | 0.010 | 0.010 |
| -0.10 | 0.60 | 1.07  | 1.09      | -0.040    | 0.000     | 0.034    | 0.034 | 0.018 | 0.020 |
| -0.20 | 0.60 | 1.11  | 1.10      | -0.038    | -0.008    | 0.035    | 0.035 | 0.017 | 0.011 |
| -0.30 | 0.60 | 1.11  | 1.11      | -0.040    | -0.012    | 0.037    | 0.037 | 0.018 | 0.019 |
| -0.40 | 0.60 | 1.11  | 1.11      | -0.035    | -0.007    | 0.036    | 0.036 | 0.021 | 0.020 |
| -0.50 | 0.60 | 1.12  | 1.12      | -0.033    | -0.008    | 0.038    | 0.038 | 0.017 | 0.021 |
| -0.55 | 0.60 | 1.13  | 1.13      | -0.029    | -0.006    | 0.037    | 0.037 | 0.017 | 0.019 |
| -0.60 | 0.60 | 1.13  | 1.13      | -0.031    | -0.007    | 0.037    | 0.037 | 0.016 | 0.020 |
| -0.65 | 0.60 | 1.13  | 1.13      | -0.028    | -0.010    | 0.035    | 0.035 | 0.016 | 0.021 |
| -0.70 | 0.60 | 1.14  | 1.14      | -0.023    | -0.011    | 0.038    | 0.038 | 0.017 | 0.021 |
| -0.75 | 0.60 | 1.14  | 1.14      | -0.018    | -0.007    | 0.037    | 0.039 | 0.018 | 0.020 |
| -0.80 | 0.60 | 1.14  | 1.14      | -0.017    | -0.007    | 0.037    | 0.037 | 0.016 | 0.019 |
| -0.80 | 0.70 | 1.15  | 1.15      | -0.015    | -0.006    | 0.040    | 0.040 | 0.017 | 0.020 |
| -0.75 | 0.70 | 1.14  | 1.14      | -0.018    | -0.008    | 0.038    | 0.038 | 0.017 | 0.021 |
| -0.70 | 0.70 | 1.15  | 1.15      | -0.025    | -0.011    | 0.039    | 0.039 | 0.016 | 0.021 |
| -0.65 | 0.70 | 1.15  | 1.15      | -0.029    | -0.010    | 0.035    | 0.035 | 0.018 | 0.020 |
| -0.60 | 0.70 | 1.15  | 1.15      | -0.030    | -0.010    | 0.035    | 0.035 | 0.018 | 0.020 |
| -0.55 | 0.70 | 1.15  | 1.15      | -0.034    | -0.011    | 0.037    | 0.037 | 0.018 | 0.020 |
| -0.50 | 0.70 | 1.15  | 1.15      | -0.034    | -0.008    | 0.035    | 0.034 | 0.017 | 0.020 |
| -0.40 | 0.70 | 1.15  | 1.15      | -0.037    | -0.011    | 0.037    | 0.037 | 0.017 | 0.021 |
| -0.30 | 0.70 | 1.16  | 1.16      | -0.037    | -0.012    | 0.032    | 0.033 | 0.016 | 0.019 |
| -0.20 | 0.70 | 1.03  | 1.03      | -0.044    | -0.008    | 0.038    | 0.037 | 0.016 | 0.017 |
| -0.10 | 0.70 | 1.06  | 1.06      | -0.041    | -0.004    | 0.044    | 0.044 | 0.010 | 0.016 |
| 0.00  | 0.70 | 1.07  | 1.07      | -0.047    | -0.003    | 0.055    | 0.055 | 0.020 | 0.014 |
| 0.10  | 0.70 | 1.03  | 1.07      | -0.045    | -0.010    | 0.070    | 0.070 | 0.017 | 0.011 |
| 0.20  | 0.70 | 1.02  | 1.07      | -0.042    | -0.008    | 0.070    | 0.070 | 0.016 | 0.013 |
| 0.30  | 0.70 | 1.01  | 1.01      | -0.045    | -0.010    | 0.070    | 0.070 | 0.017 | 0.019 |
| 0.40  | 0.70 | 1.01  | 1.00      | -0.073    | -0.013    | 0.079    | 0.079 | 0.016 | 0.017 |
| 0.50  | 0.70 | 1.00  | 1.00      | -0.073    | -0.014    | 0.076    | 0.076 | 0.016 | 0.020 |
| 0.60  | 0.70 | 1.00  | 1.00      | -0.076    | -0.010    | 0.070    | 0.070 | 0.015 | 0.020 |
| 0.70  | 0.70 | 0.99  | 0.99      | -0.077    | -0.006    | 0.054    | 0.054 | 0.015 | 0.020 |
| 0.80  | 0.70 | 0.97  | 0.97      | -0.077    | -0.007    | 0.024    | 0.071 | 0.012 | 0.020 |
| 0.90  | 0.70 | 0.97  | 0.97      | -0.077    | -0.007    | 0.024    | 0.071 | 0.012 | 0.020 |
| 0.90  | 0.60 | 0.93  | 0.93      | -0.050    | -0.004    | 0.071    | 0.071 | 0.017 | 0.021 |
| 0.70  | 0.60 | 0.93  | 0.93      | -0.050    | -0.003    | 0.076    | 0.076 | 0.016 | 0.021 |
| 0.60  | 0.60 | 0.93  | 0.93      | -0.052    | -0.003    | 0.076    | 0.076 | 0.016 | 0.020 |
| 0.50  | 0.60 | 0.95  | 0.95      | -0.052    | -0.012    | 0.076    | 0.076 | 0.016 | 0.020 |
| 0.40  | 0.60 | 1.00  | 1.00      | -0.050    | -0.013    | 0.071    | 0.071 | 0.019 | 0.020 |
| 0.30  | 0.60 | 1.01  | 1.01      | -0.041    | -0.008    | 0.070    | 0.070 | 0.018 | 0.017 |
| 0.20  | 0.60 | 1.05  | 1.01      | -0.045    | -0.009    | 0.077    | 0.077 | 0.018 | 0.021 |
| 0.10  | 0.60 | 1.00  | 1.00      | -0.042    | -0.010    | 0.040    | 0.040 | 0.017 | 0.022 |
| 0.00  | 0.60 | 0.91  | 0.98      | -0.074    | -0.002    | 0.027    | 0.077 | 0.020 | 0.021 |
| -0.10 | 0.60 | 1.06  | 1.00      | -0.046    | -0.003    | 0.051    | 0.051 | 0.021 | 0.024 |
| -0.10 | 0.50 | 1.03  | 1.03      | -0.047    | -0.003    | 0.029    | 0.029 | 0.020 | 0.021 |
| -0.30 | 0.60 | 1.05  | 1.05      | -0.043    | -0.015    | 0.030    | 0.031 | 0.018 | 0.021 |
| -0.40 | 0.60 | 1.03  | 1.03      | -0.042    | -0.015    | 0.042    | 0.042 | 0.018 | 0.019 |
| -0.50 | 0.60 | 1.11  | 1.11      | -0.073    | -0.007    | 0.035    | 0.036 | 0.017 | 0.021 |
| -0.50 | 0.50 | 1.17  | 1.11      | -0.035    | -0.010    | 0.036    | 0.036 | 0.016 | 0.011 |
| -0.60 | 0.60 | 1.15  | 1.12      | -0.032    | -0.008    | 0.034    | 0.034 | 0.017 | 0.021 |
| -0.60 | 0.50 | 1.11  | 1.17      | -0.070    | -0.015    | 0.072    | 0.072 | 0.017 | 0.020 |
| -0.70 | 0.50 | 1.13  | 1.13      | -0.025    | -0.010    | 0.057    | 0.057 | 0.015 | 0.017 |
| -0.75 | 0.60 | 1.14  | 1.14      | -0.022    | -0.011    | 0.041    | 0.041 | 0.018 | 0.020 |
| -0.80 | 0.50 | 1.14  | 1.14      | -0.017    | -0.010    | 0.078    | 0.078 | 0.017 | 0.020 |
| -0.80 | 0.40 | 1.14  | 1.14      | -0.020    | -0.004    | 0.037    | 0.037 | 0.016 | 0.020 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.40  | 0.70  | 1.14            | 1.14      | -0.021    | -0.010    | 0.040      | 0.040 | 0.017 | 0.011 |
| 0.50  | 0.70  | 1.14            | 1.14      | -0.016    | -0.003    | 0.037      | 0.037 | 0.017 | 0.015 |
| -0.10 | 0.50  | 1.14            | 1.15      | -0.017    | -0.008    | 0.039      | 0.039 | 0.017 | 0.021 |
| 0.10  | 0.40  | 1.15            | 1.15      | -0.016    | -0.008    | 0.039      | 0.039 | 0.016 | 0.021 |
| 0.10  | 0.30  | 1.14            | 1.14      | -0.016    | -0.005    | 0.037      | 0.037 | 0.016 | 0.014 |
| 0.10  | 0.20  | 1.14            | 1.14      | -0.015    | -0.007    | 0.038      | 0.038 | 0.017 | 0.010 |
| 0.10  | 0.10  | 1.15            | 1.15      | -0.016    | -0.004    | 0.040      | 0.040 | 0.016 | 0.014 |
| -0.10 | 0.00  | 1.11            | 1.11      | -0.018    | -0.006    | 0.041      | 0.041 | 0.016 | 0.021 |
| 0.10  | -0.10 | 1.12            | 1.11      | -0.018    | -0.003    | 0.042      | 0.042 | 0.017 | 0.021 |
| 0.10  | -0.20 | 1.11            | 1.11      | -0.018    | -0.004    | 0.040      | 0.040 | 0.016 | 0.014 |
| -0.10 | -0.30 | 1.11            | 1.11      | -0.017    | -0.007    | 0.039      | 0.039 | 0.018 | 0.012 |
| 0.10  | -0.40 | 1.11            | 1.11      | -0.021    | -0.003    | 0.040      | 0.040 | 0.018 | 0.014 |
| -0.10 | -0.50 | 1.12            | 1.12      | -0.021    | -0.006    | 0.043      | 0.043 | 0.019 | 0.022 |
| -0.10 | -0.60 | 1.11            | 1.11      | -0.021    | -0.006    | 0.042      | 0.042 | 0.018 | 0.016 |
| 0.10  | -0.70 | 1.11            | 1.11      | -0.020    | -0.004    | 0.042      | 0.042 | 0.017 | 0.021 |
| -0.10 | -0.80 | 1.11            | 1.11      | -0.018    | -0.007    | 0.042      | 0.042 | 0.020 | 0.016 |
| -0.79 | 0.30  | 1.14            | 1.14      | -0.011    | -0.004    | 0.042      | 0.042 | 0.073 | 0.014 |
| -0.90 | 0.70  | 1.14            | 1.14      | -0.011    | -0.005    | 0.040      | 0.040 | 0.025 | 0.015 |
| -0.90 | 0.60  | 1.14            | 1.14      | -0.013    | -0.011    | 0.037      | 0.037 | 0.026 | 0.021 |
| -0.90 | 0.50  | 1.14            | 1.14      | -0.014    | -0.006    | 0.038      | 0.038 | 0.017 | 0.021 |
| -0.90 | 0.40  | 1.14            | 1.14      | -0.011    | -0.008    | 0.039      | 0.039 | 0.024 | 0.020 |
| -0.90 | 0.30  | 1.14            | 1.14      | -0.015    | -0.004    | 0.040      | 0.040 | 0.017 | 0.020 |
| -0.90 | 0.20  | 1.14            | 1.14      | -0.017    | -0.006    | 0.037      | 0.037 | 0.011 | 0.020 |
| -0.90 | 0.10  | 1.14            | 1.14      | -0.014    | -0.001    | 0.039      | 0.039 | 0.022 | 0.020 |
| -0.90 | 0.00  | 1.14            | 1.14      | -0.012    | 0.002     | 0.035      | 0.035 | 0.024 | 0.021 |
| -0.90 | -0.10 | 1.15            | 1.15      | -0.014    | -0.002    | 0.038      | 0.038 | 0.025 | 0.021 |
| -0.90 | -0.20 | 1.14            | 1.14      | -0.014    | -0.002    | 0.038      | 0.038 | 0.023 | 0.020 |
| -0.90 | -0.30 | 1.14            | 1.14      | -0.010    | -0.005    | 0.039      | 0.039 | 0.022 | 0.020 |
| -0.90 | -0.40 | 1.14            | 1.14      | -0.013    | -0.005    | 0.040      | 0.040 | 0.022 | 0.020 |
| -0.90 | -0.50 | 1.15            | 1.15      | -0.014    | -0.005    | 0.040      | 0.040 | 0.027 | 0.021 |
| -0.90 | -0.60 | 1.14            | 1.14      | -0.010    | -0.002    | 0.045      | 0.045 | 0.023 | 0.024 |
| -0.90 | -0.70 | 1.14            | 1.14      | -0.011    | -0.004    | 0.045      | 0.045 | 0.026 | 0.022 |
| -0.90 | -0.80 | 1.14            | 1.14      | -0.015    | -0.005    | 0.046      | 0.046 | 0.020 | 0.023 |
| -0.52 | 0.70  | 1.15            | 1.15      | -0.007    | -0.003    | 0.049      | 0.049 | 0.047 | 0.073 |
| -0.93 | 0.70  | 1.15            | 1.15      | -0.010    | 0.002     | 0.047      | 0.047 | 0.035 | 0.015 |
| -0.93 | 0.60  | 1.15            | 1.15      | -0.014    | -0.006    | 0.045      | 0.045 | 0.030 | 0.021 |
| -0.93 | 0.50  | 1.16            | 1.16      | -0.014    | -0.005    | 0.042      | 0.042 | 0.028 | 0.021 |
| -0.93 | 0.40  | 1.15            | 1.15      | -0.012    | -0.006    | 0.050      | 0.050 | 0.017 | 0.021 |
| -0.93 | 0.30  | 1.15            | 1.15      | -0.012    | -0.006    | 0.045      | 0.045 | 0.031 | 0.023 |
| -0.93 | 0.20  | 1.14            | 1.14      | -0.014    | -0.004    | 0.047      | 0.047 | 0.020 | 0.020 |
| -0.93 | 0.10  | 1.14            | 1.14      | -0.014    | 0.001     | 0.040      | 0.040 | 0.028 | 0.019 |
| -0.93 | 0.00  | 1.15            | 1.15      | -0.014    | 0.003     | 0.042      | 0.042 | 0.023 | 0.021 |
| -0.93 | -0.10 | 1.16            | 1.16      | -0.014    | 0.002     | 0.042      | 0.042 | 0.023 | 0.021 |
| -0.93 | -0.20 | 1.16            | 1.16      | -0.017    | -0.002    | 0.042      | 0.043 | 0.033 | 0.021 |
| -0.93 | -0.30 | 1.15            | 1.15      | -0.017    | 0.000     | 0.042      | 0.042 | 0.027 | 0.023 |
| -0.93 | -0.40 | 1.14            | 1.14      | -0.017    | -0.001    | 0.045      | 0.046 | 0.028 | 0.024 |
| -0.75 | 0.50  | 1.15            | 1.15      | -0.016    | -0.006    | 0.040      | 0.040 | 0.029 | 0.022 |
| -0.93 | 0.60  | 1.15            | 1.15      | -0.015    | -0.005    | 0.043      | 0.043 | 0.027 | 0.021 |
| -0.93 | 0.50  | 1.15            | 1.15      | -0.016    | 0.004     | 0.043      | 0.043 | 0.027 | 0.023 |
| -0.93 | 0.40  | 1.15            | 1.15      | -0.017    | 0.002     | 0.042      | 0.042 | 0.027 | 0.023 |
| -0.93 | 0.30  | 1.14            | 1.14      | -0.017    | -0.001    | 0.045      | 0.046 | 0.028 | 0.024 |
| -0.93 | 0.20  | 1.15            | 1.15      | -0.016    | -0.006    | 0.040      | 0.040 | 0.029 | 0.022 |
| -0.93 | 0.10  | 1.15            | 1.15      | -0.015    | -0.005    | 0.043      | 0.043 | 0.027 | 0.021 |
| -0.93 | 0.00  | 1.15            | 1.15      | -0.015    | 0.008     | 0.057      | 0.057 | 0.040 | 0.025 |
| -0.75 | 0.60  | 1.15            | 1.15      | -0.004    | -0.008    | 0.057      | 0.057 | 0.040 | 0.025 |
| -0.93 | 0.50  | 1.15            | 1.15      | -0.015    | -0.007    | 0.054      | 0.054 | 0.037 | 0.025 |
| -0.93 | 0.40  | 1.14            | 1.14      | -0.009    | -0.008    | 0.051      | 0.051 | 0.026 | 0.021 |
| -0.75 | 0.30  | 1.14            | 1.14      | -0.011    | -0.001    | 0.057      | 0.059 | 0.030 | 0.021 |
| -0.75 | 0.20  | 1.14            | 1.14      | -0.010    | -0.007    | 0.062      | 0.062 | 0.046 | 0.025 |
| -0.75 | 0.10  | 1.15            | 1.15      | -0.004    | -0.008    | 0.057      | 0.057 | 0.040 | 0.025 |
| -0.75 | 0.00  | 1.15            | 1.15      | -0.012    | 0.003     | 0.049      | 0.049 | 0.033 | 0.014 |
| -0.75 | -0.10 | 1.15            | 1.15      | -0.010    | 0.007     | 0.061      | 0.061 | 0.034 | 0.014 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}$ rms | $\bar{V}$   | $\bar{W}$ | $\bar{U}'$ rms | $u'$  | $v'$  | $w'$  |
|----------|----------|---------------|-------------|-----------|----------------|-------|-------|-------|
| -0.95    | -0.20    | 1.14          | 1.14 -0.014 | 0.002     | 0.061          | 0.061 | 0.078 | 0.023 |
| -0.95    | -0.70    | 1.15          | 1.15 -0.013 | 0.006     | 0.052          | 0.052 | 0.037 | 0.024 |
| -0.75    | -0.40    | 1.14          | 1.14 -0.018 | 0.003     | 0.056          | 0.056 | 0.072 | 0.023 |
| -0.95    | -0.50    | 1.15          | 1.15 -0.018 | 0.002     | 0.052          | 0.052 | 0.035 | 0.024 |
| -0.95    | -0.60    | 1.13          | 1.13 -0.016 | 0.005     | 0.082          | 0.071 | 0.181 | 0.024 |
| -0.95    | -0.70    | 1.14          | 1.14 -0.015 | 0.006     | 0.071          | 0.071 | 0.070 | 0.027 |
| -0.95    | -0.80    | 1.11          | 1.11 -0.011 | -0.003    | 0.069          | 0.069 | 0.038 | 0.022 |
| -0.95    | 0.80     | 1.17          | 1.12 -0.009 | 0.004     | 0.069          | 0.069 | 0.039 | 0.029 |
| -0.75    | 0.70     | 1.12          | 1.12 -0.008 | -0.001    | 0.070          | 0.070 | 0.037 | 0.021 |
| 0.95     | 0.60     | 1.13          | 1.13 -0.012 | 0.003     | 0.069          | 0.070 | 0.041 | 0.022 |
| -0.95    | 0.50     | 1.14          | 1.14 -0.008 | 0.002     | 0.058          | 0.058 | 0.037 | 0.024 |
| -0.95    | 0.40     | 1.13          | 1.13 -0.005 | 0.004     | 0.065          | 0.065 | 0.040 | 0.022 |
| -0.95    | 0.30     | 1.13          | 1.12 -0.013 | 0.001     | 0.073          | 0.073 | 0.038 | 0.025 |
| -0.95    | 0.20     | 1.13          | 1.13 -0.008 | 0.004     | 0.064          | 0.065 | 0.044 | 0.025 |
| -0.95    | 0.10     | 1.14          | 1.13 -0.005 | 0.009     | 0.061          | 0.061 | 0.040 | 0.025 |
| -0.95    | 0.00     | 1.14          | 1.14 -0.004 | 0.005     | 0.059          | 0.059 | 0.040 | 0.022 |
| -0.95    | -0.10    | 1.14          | 1.14 -0.002 | 0.004     | 0.068          | 0.068 | 0.039 | 0.027 |
| -0.95    | -0.20    | 1.14          | 1.14 -0.008 | 0.009     | 0.055          | 0.055 | 0.039 | 0.022 |
| -0.95    | -0.30    | 1.13          | 1.13 -0.010 | 0.007     | 0.062          | 0.062 | 0.038 | 0.022 |
| -0.95    | -0.40    | 1.13          | 1.13 -0.014 | 0.004     | 0.059          | 0.059 | 0.035 | 0.019 |
| -0.95    | -0.50    | 1.14          | 1.14 -0.014 | -0.002    | 0.058          | 0.058 | 0.038 | 0.024 |
| -0.95    | -0.60    | 1.13          | 1.13 -0.008 | -0.005    | 0.062          | 0.062 | 0.037 | 0.026 |
| -0.95    | -0.70    | 1.12          | 1.12 -0.009 | 0.006     | 0.067          | 0.069 | 0.035 | 0.025 |
| -0.95    | -0.80    | 1.10          | 1.10 0.004  | 0.008     | 0.078          | 0.078 | 0.041 | 0.035 |
| 0.88     | 0.80     | 0.83          | 0.83 -0.016 | -0.001    | 0.072          | 0.072 | 0.032 | 0.030 |
| 0.88     | 0.70     | 0.85          | 0.85 -0.010 | -0.006    | 0.076          | 0.076 | 0.027 | 0.025 |
| 0.88     | 0.60     | 0.89          | 0.89 -0.023 | 0.002     | 0.061          | 0.061 | 0.026 | 0.028 |
| 0.88     | 0.50     | 0.93          | 0.97 -0.006 | 0.001     | 0.052          | 0.051 | 0.025 | 0.022 |
| 0.88     | 0.40     | 0.92          | 0.82 -0.013 | 0.001     | 0.133          | 0.133 | 0.026 | 0.038 |
| 0.88     | 0.30     | 0.79          | 0.79 -0.002 | -0.008    | 0.096          | 0.098 | 0.016 | 0.053 |
| 0.88     | 0.20     | 0.79          | 0.79 -0.014 | -0.001    | 0.115          | 0.115 | 0.027 | 0.012 |
| 0.88     | 0.10     | 0.82          | 0.81 -0.011 | -0.002    | 0.091          | 0.091 | 0.019 | 0.011 |
| 0.88     | 0.00     | 0.79          | 0.79 -0.011 | 0.025     | 0.091          | 0.093 | 0.024 | 0.069 |
| 0.88     | -0.10    | 0.82          | 0.81 -0.024 | 0.016     | 0.077          | 0.079 | 0.014 | 0.052 |
| 0.88     | -0.20    | 0.79          | 0.79 -0.021 | 0.004     | 0.097          | 0.098 | 0.015 | 0.049 |
| 0.88     | -0.30    | 0.78          | 0.77 -0.017 | 0.008     | 0.093          | 0.093 | 0.014 | 0.048 |
| 0.88     | -0.40    | 0.78          | 0.78 -0.021 | 0.008     | 0.097          | 0.096 | 0.025 | 0.048 |
| 0.88     | -0.50    | 0.75          | 0.75 -0.016 | 0.006     | 0.095          | 0.095 | 0.018 | 0.044 |
| 0.88     | -0.60    | 0.73          | 0.73 -0.018 | -0.003    | 0.068          | 0.068 | 0.017 | 0.040 |
| 0.88     | -0.70    | 0.67          | 0.67 -0.016 | 0.005     | 0.111          | 0.112 | 0.023 | 0.051 |
| 0.88     | -0.80    | 0.65          | 0.65 -0.022 | -0.005    | 0.088          | 0.089 | 0.030 | 0.054 |

Table D-3, Station 6,  $\theta = 30^\circ$ ORIGINAL PAGE IS  
OF POOR QUALITY

| $y$   | $z$   | $U_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $U'$  | $V'$  | $W'$  |
|-------|-------|-----------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.00  | 0.90      | 0.89      | 0.060     | -0.013    | 0.028      | 0.028 | 0.053 | 0.018 |
| 0.70  | 0.00  | 0.91      | 0.91      | 0.046     | -0.013    | 0.028      | 0.028 | 0.049 | 0.018 |
| 0.60  | 0.00  | 0.93      | 0.92      | 0.067     | -0.014    | 0.031      | 0.032 | 0.056 | 0.018 |
| 0.50  | 0.00  | 0.95      | 0.94      | 0.098     | -0.013    | 0.031      | 0.031 | 0.062 | 0.018 |
| 0.40  | 0.00  | 0.96      | 0.96      | 0.093     | -0.013    | 0.033      | 0.033 | 0.059 | 0.019 |
| 0.30  | 0.00  | 0.98      | 0.97      | 0.106     | -0.012    | 0.034      | 0.034 | 0.063 | 0.018 |
| 0.20  | 0.00  | 1.00      | 0.99      | 0.106     | -0.011    | 0.033      | 0.033 | 0.062 | 0.019 |
| 0.10  | 0.00  | 1.02      | 1.01      | 0.101     | -0.012    | 0.032      | 0.031 | 0.063 | 0.018 |
| 0.00  | 0.00  | 1.03      | 1.03      | 0.104     | -0.013    | 0.032      | 0.032 | 0.059 | 0.027 |
| -0.10 | 0.00  | 1.06      | 1.05      | 0.102     | -0.011    | 0.031      | 0.031 | 0.059 | 0.018 |
| -0.20 | 0.00  | 1.08      | 1.07      | 0.098     | -0.013    | 0.030      | 0.030 | 0.064 | 0.017 |
| -0.30 | 0.00  | 1.10      | 1.09      | 0.095     | -0.014    | 0.029      | 0.028 | 0.065 | 0.017 |
| -0.40 | 0.00  | 1.12      | 1.11      | 0.093     | -0.017    | 0.026      | 0.026 | 0.061 | 0.017 |
| -0.50 | 0.00  | 1.14      | 1.13      | 0.089     | -0.018    | 0.030      | 0.030 | 0.059 | 0.018 |
| -0.55 | 0.00  | 1.15      | 1.14      | 0.083     | -0.016    | 0.030      | 0.030 | 0.051 | 0.018 |
| -0.60 | 0.00  | 1.16      | 1.16      | 0.080     | -0.017    | 0.028      | 0.027 | 0.052 | 0.017 |
| -0.65 | 0.00  | 1.18      | 1.17      | 0.081     | -0.020    | 0.028      | 0.028 | 0.047 | 0.018 |
| -0.70 | 0.00  | 1.19      | 1.18      | 0.060     | -0.016    | 0.030      | 0.030 | 0.044 | 0.017 |
| -0.75 | 0.00  | 1.20      | 1.20      | 0.043     | -0.012    | 0.025      | 0.025 | 0.038 | 0.015 |
| -0.80 | 0.00  | 1.22      | 1.22      | 0.041     | -0.012    | 0.023      | 0.023 | 0.028 | 0.017 |
| -0.80 | -0.10 | 1.21      | 1.21      | 0.047     | -0.008    | 0.027      | 0.027 | 0.034 | 0.015 |
| -0.75 | -0.10 | 1.20      | 1.20      | 0.061     | -0.010    | 0.027      | 0.027 | 0.033 | 0.018 |
| -0.70 | -0.10 | 1.19      | 1.18      | 0.076     | -0.011    | 0.029      | 0.029 | 0.041 | 0.018 |
| -0.65 | -0.10 | 1.18      | 1.17      | 0.086     | -0.015    | 0.029      | 0.029 | 0.042 | 0.020 |
| -0.60 | -0.10 | 1.16      | 1.16      | 0.092     | -0.013    | 0.031      | 0.030 | 0.049 | 0.018 |
| -0.55 | -0.10 | 1.15      | 1.14      | 0.101     | -0.014    | 0.030      | 0.031 | 0.054 | 0.017 |
| -0.50 | -0.10 | 1.14      | 1.14      | 0.103     | -0.014    | 0.033      | 0.033 | 0.054 | 0.019 |
| -0.40 | -0.10 | 1.11      | 1.11      | 0.114     | -0.017    | 0.031      | 0.031 | 0.055 | 0.020 |
| -0.30 | -0.10 | 1.10      | 1.09      | 0.116     | -0.015    | 0.034      | 0.034 | 0.053 | 0.019 |
| -0.20 | -0.10 | 1.07      | 1.06      | 0.117     | -0.018    | 0.034      | 0.033 | 0.055 | 0.020 |
| -0.10 | -0.10 | 1.05      | 1.05      | 0.121     | -0.015    | 0.034      | 0.034 | 0.054 | 0.019 |
| 0.00  | -0.10 | 1.04      | 1.03      | 0.122     | -0.009    | 0.032      | 0.031 | 0.057 | 0.017 |
| 0.10  | -0.10 | 1.02      | 1.01      | 0.129     | -0.011    | 0.033      | 0.034 | 0.060 | 0.018 |
| 0.20  | -0.10 | 1.00      | 0.99      | 0.117     | -0.009    | 0.031      | 0.029 | 0.057 | 0.018 |
| 0.30  | -0.10 | 0.99      | 0.98      | 0.122     | -0.010    | 0.032      | 0.032 | 0.061 | 0.017 |
| 0.40  | -0.10 | 0.97      | 0.96      | 0.119     | -0.011    | 0.032      | 0.030 | 0.071 | 0.019 |
| 0.50  | -0.10 | 0.95      | 0.95      | 0.110     | -0.012    | 0.032      | 0.031 | 0.064 | 0.018 |
| 0.60  | -0.10 | 0.93      | 0.93      | 0.093     | -0.010    | 0.026      | 0.026 | 0.066 | 0.018 |
| 0.70  | -0.10 | 0.92      | 0.91      | 0.081     | -0.009    | 0.027      | 0.026 | 0.055 | 0.018 |
| 0.80  | -0.10 | 0.90      | 0.89      | 0.072     | -0.009    | 0.029      | 0.029 | 0.046 | 0.020 |
| 0.80  | -0.20 | 0.90      | 0.89      | 0.075     | -0.014    | 0.028      | 0.029 | 0.042 | 0.021 |
| 0.70  | -0.20 | 0.92      | 0.91      | 0.078     | -0.014    | 0.028      | 0.027 | 0.053 | 0.016 |
| 0.60  | -0.20 | 0.93      | 0.93      | 0.097     | -0.016    | 0.028      | 0.029 | 0.066 | 0.018 |
| 0.50  | -0.20 | 0.95      | 0.94      | 0.093     | -0.013    | 0.029      | 0.029 | 0.072 | 0.017 |
| 0.40  | -0.20 | 0.97      | 0.96      | 0.117     | -0.011    | 0.031      | 0.030 | 0.077 | 0.016 |
| 0.30  | -0.20 | 0.99      | 0.97      | 0.147     | -0.013    | 0.032      | 0.030 | 0.078 | 0.017 |
| 0.20  | -0.20 | 1.01      | 0.99      | 0.146     | -0.015    | 0.033      | 0.032 | 0.068 | 0.018 |
| 0.10  | -0.20 | 1.02      | 1.01      | 0.132     | -0.015    | 0.032      | 0.031 | 0.060 | 0.018 |
| 0.00  | -0.20 | 1.04      | 1.03      | 0.134     | -0.013    | 0.032      | 0.031 | 0.063 | 0.019 |
| -0.10 | -0.20 | 1.06      | 1.05      | 0.133     | -0.013    | 0.033      | 0.033 | 0.058 | 0.018 |
| -0.20 | -0.20 | 1.08      | 1.07      | 0.131     | -0.016    | 0.032      | 0.031 | 0.060 | 0.018 |
| -0.30 | -0.20 | 1.10      | 1.09      | 0.131     | -0.012    | 0.030      | 0.030 | 0.064 | 0.017 |
| -0.40 | -0.20 | 1.12      | 1.11      | 0.122     | -0.013    | 0.029      | 0.029 | 0.057 | 0.019 |
| -0.50 | -0.20 | 1.14      | 1.13      | 0.107     | -0.016    | 0.031      | 0.031 | 0.049 | 0.019 |
| -0.55 | -0.20 | 1.15      | 1.15      | 0.093     | -0.012    | 0.025      | 0.025 | 0.048 | 0.016 |
| -0.60 | -0.20 | 1.16      | 1.15      | 0.096     | -0.011    | 0.027      | 0.027 | 0.047 | 0.017 |
| -0.65 | -0.20 | 1.18      | 1.17      | 0.086     | -0.010    | 0.027      | 0.027 | 0.047 | 0.016 |
| -0.70 | -0.20 | 1.19      | 1.19      | 0.067     | -0.007    | 0.022      | 0.022 | 0.044 | 0.016 |
| -0.75 | -0.20 | 1.20      | 1.20      | 0.065     | -0.003    | 0.024      | 0.024 | 0.038 | 0.017 |
| -0.80 | -0.20 | 1.22      | 1.22      | 0.053     | 0.000     | 0.020      | 0.019 | 0.032 | 0.015 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.30 | 1.21            | 1.21      | 0.050     | 0.001     | 0.025      | 0.025 | 0.020 | 0.016 |
| -0.75 | -0.30 | 1.20            | 1.20      | 0.065     | -0.002    | 0.021      | 0.021 | 0.040 | 0.015 |
| -0.70 | -0.30 | 1.19            | 1.18      | 0.083     | -0.003    | 0.028      | 0.028 | 0.043 | 0.015 |
| -0.65 | -0.30 | 1.18            | 1.17      | 0.093     | -0.008    | 0.029      | 0.028 | 0.044 | 0.016 |
| -0.60 | -0.30 | 1.17            | 1.16      | 0.100     | -0.007    | 0.029      | 0.030 | 0.051 | 0.016 |
| -0.55 | -0.30 | 1.16            | 1.15      | 0.100     | -0.008    | 0.024      | 0.024 | 0.053 | 0.016 |
| -0.50 | -0.30 | 1.15            | 1.14      | 0.101     | -0.006    | 0.025      | 0.025 | 0.050 | 0.016 |
| -0.40 | -0.30 | 1.12            | 1.12      | 0.117     | -0.010    | 0.027      | 0.027 | 0.055 | 0.017 |
| -0.30 | -0.30 | 1.11            | 1.10      | 0.138     | -0.009    | 0.028      | 0.028 | 0.060 | 0.016 |
| -0.20 | -0.30 | 1.08            | 1.07      | 0.138     | -0.010    | 0.028      | 0.028 | 0.061 | 0.017 |
| 0.10  | -0.30 | 1.06            | 1.05      | 0.154     | -0.012    | 0.033      | 0.037 | 0.070 | 0.018 |
| 0.00  | -0.30 | 1.05            | 1.03      | 0.150     | -0.011    | 0.036      | 0.036 | 0.065 | 0.017 |
| 0.10  | -0.30 | 1.03            | 1.02      | 0.152     | -0.013    | 0.029      | 0.028 | 0.063 | 0.018 |
| 0.20  | -0.30 | 1.01            | 0.99      | 0.156     | -0.014    | 0.034      | 0.032 | 0.068 | 0.019 |
| 0.30  | -0.30 | 0.99            | 0.98      | 0.157     | -0.013    | 0.032      | 0.029 | 0.077 | 0.018 |
| 0.40  | -0.30 | 0.97            | 0.96      | 0.135     | -0.014    | 0.031      | 0.028 | 0.071 | 0.018 |
| 0.50  | -0.30 | 0.96            | 0.95      | 0.133     | -0.013    | 0.028      | 0.026 | 0.072 | 0.017 |
| 0.60  | -0.30 | 0.94            | 0.93      | 0.119     | -0.016    | 0.026      | 0.024 | 0.075 | 0.015 |
| 0.70  | -0.30 | 0.92            | 0.91      | 0.119     | -0.014    | 0.027      | 0.025 | 0.066 | 0.014 |
| 0.80  | -0.30 | 0.79            | 0.89      | 0.089     | -0.017    | 0.024      | 0.024 | 0.051 | 0.019 |
| 0.80  | -0.40 | 0.90            | 0.90      | 0.087     | -0.018    | 0.026      | 0.025 | 0.053 | 0.020 |
| 0.70  | -0.40 | 0.97            | 0.91      | 0.090     | -0.018    | 0.025      | 0.023 | 0.066 | 0.016 |
| 0.60  | -0.40 | 0.94            | 0.9       | 0.087     | -0.018    | 0.025      | 0.023 | 0.077 | 0.015 |
| 0.50  | -0.40 | 0.95            | 0.94      | 0.120     | -0.015    | 0.027      | 0.024 | 0.090 | 0.016 |
| 0.40  | -0.40 | 0.98            | 0.96      | 0.158     | -0.017    | 0.033      | 0.030 | 0.093 | 0.017 |
| 0.30  | -0.40 | 0.97            | 0.97      | 0.157     | -0.013    | 0.036      | 0.030 | 0.096 | 0.017 |
| 0.20  | -0.40 | 1.01            | 0.99      | 0.149     | -0.017    | 0.032      | 0.031 | 0.083 | 0.016 |
| 0.10  | -0.40 | 1.02            | 1.01      | 0.164     | -0.011    | 0.030      | 0.028 | 0.082 | 0.017 |
| 0.00  | -0.40 | 1.05            | 1.03      | 0.167     | -0.011    | 0.033      | 0.032 | 0.077 | 0.019 |
| 0.10  | -0.40 | 1.06            | 1.05      | 0.138     | -0.013    | 0.030      | 0.020 | 0.060 | 0.020 |
| -0.20 | -0.40 | 1.08            | 1.05      | 0.146     | -0.008    | 0.032      | 0.032 | 0.063 | 0.016 |
| -0.30 | -0.40 | 1.10            | 1.09      | 0.126     | -0.011    | 0.029      | 0.018 | 0.066 | 0.018 |
| -0.40 | -0.40 | 1.17            | 1.12      | 0.112     | -0.007    | 0.026      | 0.025 | 0.061 | 0.016 |
| -0.50 | -0.40 | 1.14            | 1.14      | 0.104     | -0.006    | 0.025      | 0.025 | 0.056 | 0.017 |
| -0.55 | -0.40 | 1.16            | 1.15      | 0.110     | -0.005    | 0.028      | 0.028 | 0.058 | 0.015 |
| -0.60 | -0.40 | 1.17            | 1.17      | 0.102     | -0.005    | 0.026      | 0.026 | 0.054 | 0.015 |
| -0.65 | -0.40 | 1.18            | 1.18      | 0.086     | -0.005    | 0.024      | 0.027 | 0.051 | 0.014 |
| -0.70 | -0.40 | 1.20            | 1.19      | 0.077     | -0.002    | 0.025      | 0.024 | 0.046 | 0.015 |
| -0.75 | -0.40 | 1.21            | 1.21      | 0.058     | -0.001    | 0.023      | 0.022 | 0.045 | 0.016 |
| -0.80 | -0.40 | 1.22            | 1.22      | 0.047     | 0.003     | 0.021      | 0.021 | 0.034 | 0.016 |
| -0.80 | -0.50 | 1.22            | 1.22      | 0.038     | 0.007     | 0.022      | 0.022 | 0.020 | 0.013 |
| -0.75 | -0.50 | 1.21            | 1.21      | 0.048     | 0.003     | 0.019      | 0.019 | 0.038 | 0.013 |
| -0.70 | -0.50 | 1.19            | 1.19      | 0.073     | 0.000     | 0.026      | 0.025 | 0.048 | 0.016 |
| -0.65 | -0.50 | 1.18            | 1.18      | 0.089     | -0.004    | 0.026      | 0.025 | 0.050 | 0.016 |
| -0.60 | -0.50 | 1.17            | 1.17      | 0.098     | -0.004    | 0.027      | 0.027 | 0.050 | 0.015 |
| -0.55 | -0.50 | 1.16            | 1.15      | 0.099     | -0.005    | 0.024      | 0.024 | 0.056 | 0.015 |
| -0.50 | -0.50 | 1.15            | 1.14      | 0.118     | -0.007    | 0.027      | 0.028 | 0.055 | 0.016 |
| -0.40 | -0.50 | 1.17            | 1.12      | 0.128     | -0.010    | 0.030      | 0.020 | 0.061 | 0.017 |
| -0.30 | -0.50 | 1.10            | 1.09      | 0.141     | -0.012    | 0.031      | 0.030 | 0.066 | 0.018 |
| -0.20 | -0.50 | 1.08            | 1.07      | 0.148     | -0.010    | 0.030      | 0.031 | 0.069 | 0.019 |
| -0.10 | -0.50 | 1.06            | 1.05      | 0.145     | -0.014    | 0.033      | 0.033 | 0.071 | 0.018 |
| 0.00  | -0.50 | 1.04            | 1.03      | 0.167     | -0.012    | 0.037      | 0.035 | 0.076 | 0.019 |
| 0.10  | -0.50 | 1.03            | 1.01      | 0.168     | -0.016    | 0.036      | 0.034 | 0.081 | 0.018 |
| 0.20  | -0.50 | 1.01            | 1.00      | 0.169     | -0.019    | 0.034      | 0.032 | 0.077 | 0.026 |
| 0.30  | -0.50 | 1.00            | 0.98      | 0.162     | -0.013    | 0.033      | 0.029 | 0.100 | 0.016 |
| 0.40  | -0.50 | 0.98            | 0.96      | 0.171     | -0.017    | 0.031      | 0.026 | 0.107 | 0.016 |
| 0.50  | -0.50 | 0.96            | 0.95      | 0.113     | -0.018    | 0.032      | 0.028 | 0.104 | 0.016 |
| 0.60  | -0.50 | 0.94            | 0.93      | 0.137     | -0.020    | 0.032      | 0.029 | 0.086 | 0.014 |
| 0.70  | -0.50 | 0.97            | 0.92      | 0.117     | -0.022    | 0.025      | 0.024 | 0.087 | 0.016 |
| 0.80  | -0.50 | 0.90            | 0.90      | 0.004     | -0.022    | 0.025      | 0.025 | 0.057 | 0.017 |

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| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80     | -0.60    | 0.90            | 0.89      | 0.070     | -0.025    | 0.032      | 0.031 | 0.069 | 0.024 |
| 0.70     | -0.60    | 0.92            | 0.91      | 0.113     | -0.022    | 0.023      | 0.021 | 0.064 | 0.016 |
| 0.60     | -0.60    | 0.94            | 0.93      | 0.130     | -0.025    | 0.028      | 0.027 | 0.077 | 0.015 |
| 0.50     | -0.60    | 0.95            | 0.94      | 0.109     | -0.019    | 0.026      | 0.023 | 0.094 | 0.015 |
| 0.40     | -0.60    | 0.97            | 0.97      | 0.089     | -0.013    | 0.023      | 0.021 | 0.092 | 0.013 |
| 0.30     | -0.60    | 1.00            | 0.98      | 0.150     | -0.017    | 0.028      | 0.025 | 0.099 | 0.015 |
| 0.20     | -0.60    | 1.02            | 1.00      | 0.172     | -0.016    | 0.033      | 0.031 | 0.095 | 0.018 |
| 0.10     | -0.60    | 1.03            | 1.01      | 0.166     | -0.015    | 0.032      | 0.032 | 0.076 | 0.017 |
| 0.00     | -0.60    | 1.05            | 1.03      | 0.153     | -0.010    | 0.033      | 0.031 | 0.084 | 0.017 |
| -0.10    | -0.60    | 1.07            | 1.06      | 0.134     | -0.007    | 0.028      | 0.028 | 0.080 | 0.018 |
| -0.20    | -0.60    | 1.09            | 1.08      | 0.135     | -0.005    | 0.030      | 0.029 | 0.071 | 0.018 |
| -0.30    | -0.60    | 1.11            | 1.10      | 0.134     | -0.007    | 0.028      | 0.028 | 0.065 | 0.018 |
| -0.40    | -0.60    | 1.13            | 1.12      | 0.122     | -0.007    | 0.027      | 0.027 | 0.063 | 0.016 |
| -0.50    | -0.60    | 1.15            | 1.14      | 0.124     | -0.005    | 0.028      | 0.028 | 0.062 | 0.015 |
| -0.55    | -0.60    | 1.17            | 1.16      | 0.108     | -0.007    | 0.023      | 0.023 | 0.055 | 0.015 |
| -0.60    | -0.60    | 1.18            | 1.17      | 0.104     | -0.007    | 0.028      | 0.027 | 0.051 | 0.016 |
| -0.65    | -0.60    | 1.19            | 1.18      | 0.094     | -0.001    | 0.023      | 0.023 | 0.055 | 0.015 |
| -0.70    | -0.60    | 1.20            | 1.19      | 0.079     | -0.003    | 0.019      | 0.019 | 0.045 | 0.014 |
| -0.75    | -0.60    | 1.21            | 1.21      | 0.071     | 0.004     | 0.023      | 0.022 | 0.035 | 0.015 |
| -0.80    | -0.60    | 1.22            | 1.22      | 0.063     | 0.010     | 0.021      | 0.021 | 0.032 | 0.016 |
| -0.30    | -0.70    | 1.22            | 1.12      | 0.075     | 0.009     | 0.021      | 0.021 | 0.032 | 0.016 |
| -0.75    | -0.70    | 1.21            | 1.21      | 0.079     | 0.001     | 0.021      | 0.021 | 0.037 | 0.016 |
| -0.70    | -0.70    | 1.20            | 1.19      | 0.093     | -0.004    | 0.024      | 0.024 | 0.041 | 0.015 |
| -0.65    | -0.70    | 1.18            | 1.18      | 0.108     | -0.003    | 0.026      | 0.026 | 0.045 | 0.015 |
| 0.60     | -0.70    | 1.18            | 1.17      | 0.122     | -0.004    | 0.024      | 0.024 | 0.050 | 0.015 |
| -0.55    | -0.70    | 1.16            | 1.15      | 0.127     | -0.004    | 0.029      | 0.028 | 0.053 | 0.016 |
| -0.50    | -0.70    | 1.15            | 1.14      | 0.113     | -0.004    | 0.027      | 0.027 | 0.054 | 0.017 |
| -0.40    | -0.70    | 1.12            | 1.12      | 0.131     | -0.006    | 0.028      | 0.027 | 0.055 | 0.018 |
| -0.30    | -0.70    | 1.10            | 1.09      | 0.123     | -0.006    | 0.029      | 0.029 | 0.049 | 0.018 |
| -0.20    | -0.70    | 1.09            | 1.08      | 0.144     | -0.005    | 0.030      | 0.029 | 0.063 | 0.018 |
| -0.10    | -0.70    | 1.06            | 1.05      | 0.137     | -0.006    | 0.036      | 0.035 | 0.059 | 0.018 |
| 0.00     | -0.70    | 1.04            | 1.03      | 0.137     | -0.006    | 0.031      | 0.031 | 0.063 | 0.017 |
| 0.10     | -0.70    | 1.03            | 1.02      | 0.140     | -0.010    | 0.032      | 0.032 | 0.059 | 0.018 |
| 0.20     | -0.70    | 1.01            | 1.00      | 0.128     | -0.013    | 0.032      | 0.030 | 0.061 | 0.017 |
| 0.30     | -0.70    | 0.99            | 0.98      | 0.176     | -0.015    | 0.029      | 0.029 | 0.061 | 0.018 |
| 0.40     | -0.70    | 0.97            | 0.96      | 0.121     | -0.021    | 0.027      | 0.026 | 0.058 | 0.016 |
| 0.50     | -0.70    | 0.95            | 0.94      | 0.117     | -0.022    | 0.027      | 0.027 | 0.061 | 0.015 |
| 0.60     | -0.70    | 0.94            | 0.93      | 0.135     | -0.028    | 0.026      | 0.026 | 0.056 | 0.015 |
| 0.70     | -0.70    | 0.92            | 0.91      | 0.113     | -0.034    | 0.033      | 0.032 | 0.061 | 0.019 |
| 0.80     | -0.70    | 0.89            | 0.89      | 0.090     | -0.032    | 0.037      | 0.037 | 0.062 | 0.025 |
| 0.80     | -0.80    | 0.88            | 0.87      | 0.086     | -0.036    | 0.043      | 0.042 | 0.066 | 0.024 |
| 0.70     | -0.80    | 0.92            | 0.91      | 0.106     | -0.038    | 0.035      | 0.035 | 0.052 | 0.021 |
| 0.60     | -0.80    | 0.94            | 0.93      | 0.117     | -0.035    | 0.033      | 0.033 | 0.061 | 0.020 |
| 0.50     | -0.80    | 0.95            | 0.95      | 0.103     | -0.030    | 0.035      | 0.035 | 0.053 | 0.020 |
| 0.40     | -0.80    | 0.97            | 0.96      | 0.121     | -0.019    | 0.037      | 0.037 | 0.048 | 0.018 |
| 0.30     | -0.80    | 0.97            | 0.98      | 0.123     | -0.018    | 0.032      | 0.032 | 0.049 | 0.020 |
| 0.20     | -0.80    | 1.00            | 0.99      | 0.104     | -0.013    | 0.032      | 0.033 | 0.049 | 0.021 |
| 0.10     | -0.80    | 1.02            | 1.01      | 0.120     | -0.009    | 0.037      | 0.038 | 0.048 | 0.019 |
| 0.00     | -0.80    | 1.04            | 1.03      | 0.124     | -0.006    | 0.038      | 0.038 | 0.058 | 0.021 |
| -0.10    | -0.80    | 1.06            | 1.05      | 0.105     | -0.007    | 0.038      | 0.038 | 0.049 | 0.022 |
| -0.20    | -0.80    | 1.08            | 1.07      | 0.128     | -0.005    | 0.036      | 0.036 | 0.057 | 0.021 |
| -0.30    | -0.80    | 1.10            | 1.10      | 0.126     | -0.007    | 0.036      | 0.036 | 0.059 | 0.020 |
| -0.40    | -0.80    | 1.13            | 1.12      | 0.128     | -0.003    | 0.035      | 0.035 | 0.050 | 0.030 |
| -0.50    | -0.80    | 1.14            | 1.13      | 0.117     | -0.010    | 0.032      | 0.031 | 0.049 | 0.021 |
| -0.55    | -0.80    | 1.15            | 1.14      | 0.115     | -0.010    | 0.034      | 0.034 | 0.051 | 0.020 |
| -0.60    | -0.80    | 1.17            | 1.17      | 0.108     | -0.011    | 0.032      | 0.032 | 0.045 | 0.020 |
| -0.65    | -0.80    | 1.18            | 1.17      | 0.102     | -0.010    | 0.031      | 0.031 | 0.041 | 0.020 |
| -0.70    | -0.80    | 1.20            | 1.19      | 0.093     | -0.010    | 0.030      | 0.030 | 0.037 | 0.020 |
| -0.75    | -0.80    | 1.21            | 1.20      | 0.088     | -0.010    | 0.035      | 0.035 | 0.036 | 0.020 |
| -0.80    | -0.80    | 1.20            | 1.17      | 0.084     | 0.000     | 0.052      | 0.052 | 0.034 | 0.025 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.90 | 1.10            | 1.03      | -0.014    | -0.007    | 0.055      | 0.055 | 0.055 | 0.037 |
| -0.75 | -0.70 | 1.11            | 1.11      | -0.002    | -0.009    | 0.048      | 0.048 | 0.051 | 0.026 |
| -0.70 | -0.70 | 1.13            | 1.12      | 0.017     | -0.012    | 0.050      | 0.050 | 0.051 | 0.033 |
| -0.65 | -0.70 | 1.12            | 1.11      | 0.022     | -0.011    | 0.054      | 0.054 | 0.053 | 0.029 |
| -0.60 | -0.70 | 1.13            | 1.12      | 0.036     | -0.015    | 0.045      | 0.045 | 0.054 | 0.032 |
| -0.55 | -0.70 | 1.12            | 1.11      | 0.041     | -0.007    | 0.043      | 0.044 | 0.058 | 0.030 |
| -0.50 | -0.70 | 1.11            | 1.11      | 0.043     | -0.012    | 0.043      | 0.043 | 0.059 | 0.029 |
| -0.40 | -0.70 | 1.07            | 1.07      | 0.042     | -0.006    | 0.047      | 0.048 | 0.053 | 0.029 |
| -0.30 | -0.70 | 1.06            | 1.06      | 0.037     | -0.002    | 0.047      | 0.047 | 0.056 | 0.030 |
| -0.20 | -0.70 | 1.04            | 1.04      | 0.054     | -0.002    | 0.047      | 0.047 | 0.057 | 0.034 |
| -0.10 | -0.70 | 1.00            | 1.00      | 0.039     | 0.006     | 0.052      | 0.052 | 0.069 | 0.034 |
| 0.00  | -0.70 | 0.98            | 0.96      | 0.021     | -0.002    | 0.070      | 0.070 | 0.072 | 0.035 |
| 0.10  | -0.70 | 0.93            | 0.93      | 0.019     | -0.012    | 0.072      | 0.072 | 0.070 | 0.039 |
| 0.20  | -0.70 | 0.92            | 0.91      | 0.010     | 0.017     | 0.071      | 0.068 | 0.074 | 0.084 |
| 0.30  | -0.70 | 0.88            | 0.88      | 0.014     | -0.011    | 0.073      | 0.073 | 0.066 | 0.058 |
| 0.40  | -0.70 | 0.87            | 0.87      | 0.009     | -0.015    | 0.071      | 0.070 | 0.071 | 0.041 |
| 0.50  | -0.70 | 0.88            | 0.87      | 0.039     | -0.028    | 0.060      | 0.061 | 0.073 | 0.040 |
| 0.60  | -0.70 | 0.89            | 0.89      | 0.087     | -0.039    | 0.051      | 0.052 | 0.048 | 0.034 |
| 0.70  | -0.70 | 0.89            | 0.89      | 0.075     | -0.046    | 0.045      | 0.044 | 0.048 | 0.030 |
| 0.80  | -0.70 | 0.83            | 0.83      | 0.052     | -0.041    | 0.078      | 0.078 | 0.057 | 0.047 |
| -0.80 | -0.95 | 1.06            | 1.06      | -0.051    | -0.009    | 0.073      | 0.072 | 0.056 | 0.039 |
| -0.75 | -0.95 | 1.07            | 1.07      | -0.040    | -0.008    | 0.060      | 0.060 | 0.058 | 0.038 |
| -0.70 | -0.95 | 1.06            | 1.05      | -0.031    | -0.008    | 0.069      | 0.069 | 0.057 | 0.040 |
| -0.65 | -0.95 | 1.07            | 1.07      | -0.014    | -0.007    | 0.062      | 0.063 | 0.062 | 0.037 |
| -0.60 | -0.95 | 1.06            | 1.06      | -0.016    | -0.016    | 0.063      | 0.064 | 0.061 | 0.037 |
| -0.55 | -0.95 | 1.05            | 1.05      | -0.009    | -0.013    | 0.057      | 0.057 | 0.063 | 0.042 |
| -0.50 | -0.95 | 1.05            | 1.05      | -0.006    | -0.010    | 0.066      | 0.066 | 0.074 | 0.037 |
| -0.40 | -0.95 | 1.03            | 1.03      | -0.004    | -0.007    | 0.061      | 0.061 | 0.067 | 0.045 |
| -0.30 | -0.95 | 1.01            | 1.00      | -0.005    | -0.007    | 0.068      | 0.068 | 0.063 | 0.041 |
| -0.20 | -0.95 | 0.77            | 0.76      | -0.001    | 0.001     | 0.077      | 0.073 | 0.067 | 0.044 |
| -0.10 | -0.95 | 0.71            | 0.91      | 0.021     | -0.005    | 0.081      | 0.080 | 0.071 | 0.046 |
| 0.00  | -0.95 | 0.87            | 0.89      | -0.036    | -0.000    | 0.075      | 0.076 | 0.078 | 0.043 |
| 0.10  | -0.95 | 0.87            | 0.87      | 0.040     | -0.006    | 0.079      | 0.070 | 0.054 | 0.015 |
| 0.20  | -0.95 | 0.86            | 0.85      | -0.049    | 0.001     | 0.085      | 0.085 | 0.076 | 0.074 |
| 0.30  | -0.95 | 0.82            | 0.82      | -0.043    | -0.017    | 0.079      | 0.079 | 0.073 | 0.050 |
| 0.40  | -0.95 | 0.81            | 0.80      | -0.042    | -0.015    | 0.078      | 0.079 | 0.075 | 0.049 |
| 0.50  | -0.95 | 0.83            | 0.83      | 0.015     | 0.030     | 0.104      | 0.081 | 0.119 | 0.159 |
| 0.55  | -0.95 | 0.87            | 0.83      | 0.085     | 0.057     | 0.109      | 0.242 | 0.052 | 0.178 |
| 0.60  | -0.95 | 0.83            | 0.82      | 0.080     | -0.037    | 0.067      | 0.067 | 0.042 | 0.054 |
| 0.65  | -0.95 | 0.84            | 0.87      | 0.054     | -0.045    | 0.057      | 0.058 | 0.050 | 0.041 |
| 0.70  | -0.95 | 0.86            | 0.85      | 0.048     | -0.037    | 0.051      | 0.051 | 0.052 | 0.047 |
| 0.80  | -0.95 | 0.79            | 0.79      | 0.014     | -0.027    | 0.083      | 0.085 | 0.058 | 0.047 |
| -0.80 | -0.95 | 0.79            | 0.98      | -0.110    | -0.002    | 0.078      | 0.078 | 0.066 | 0.045 |
| -0.75 | -0.95 | 0.77            | 0.98      | -0.115    | -0.003    | 0.083      | 0.083 | 0.068 | 0.041 |
| -0.70 | -0.95 | 0.79            | 0.99      | -0.095    | -0.013    | 0.081      | 0.081 | 0.071 | 0.041 |
| -0.65 | -0.95 | 1.00            | 0.99      | -0.078    | -0.014    | 0.078      | 0.077 | 0.069 | 0.044 |
| -0.60 | -0.95 | 0.98            | 0.98      | -0.070    | -0.005    | 0.084      | 0.083 | 0.072 | 0.046 |
| -0.55 | -0.95 | 1.00            | 0.99      | -0.071    | -0.010    | 0.083      | 0.084 | 0.074 | 0.045 |
| -0.50 | -0.95 | 0.98            | 0.97      | -0.069    | -0.005    | 0.074      | 0.074 | 0.077 | 0.041 |
| -0.40 | -0.95 | 0.94            | 0.94      | -0.070    | -0.004    | 0.091      | 0.070 | 0.090 | 0.049 |
| -0.30 | -0.95 | 0.92            | 0.92      | -0.078    | -0.002    | 0.087      | 0.087 | 0.082 | 0.046 |
| -0.20 | -0.95 | 0.88            | 0.87      | -0.075    | 0.002     | 0.086      | 0.087 | 0.076 | 0.048 |
| -0.10 | -0.95 | 0.87            | 0.86      | -0.105    | 0.001     | 0.102      | 0.103 | 0.095 | 0.049 |
| 0.00  | -0.95 | 0.81            | 0.80      | -0.115    | 0.007     | 0.099      | 0.101 | 0.091 | 0.043 |
| 0.10  | -0.95 | 0.81            | 0.79      | -0.106    | -0.004    | 0.093      | 0.096 | 0.088 | 0.040 |
| 0.20  | -0.75 | 0.80            | 0.78      | -0.119    | -0.001    | 0.078      | 0.076 | 0.073 | 0.073 |
| 0.30  | -0.95 | 0.75            | 0.74      | -0.107    | -0.015    | 0.088      | 0.086 | 0.083 | 0.048 |
| 0.40  | -0.95 | 0.75            | 0.74      | -0.086    | -0.022    | 0.076      | 0.076 | 0.103 | 0.043 |
| 0.50  | -0.95 | 0.70            | 0.77      | 0.041     | -0.024    | 0.073      | 0.073 | 0.090 | 0.046 |
| 0.60  | -0.75 | 0.77            | 0.77      | 0.084     | -0.077    | 0.081      | 0.079 | 0.046 | 0.157 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $\bar{U}'$ | $\bar{V}'$ | $\bar{W}'$ |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|------------|------------|------------|
| 0.70  | -0.95 | 0.84            | 0.84      | 0.061     | -0.075    | 0.075            | 0.067      | 0.062      | 0.178      |
| 0.80  | -0.95 | 0.76            | 0.76      | 0.065     | -0.019    | 0.082            | 0.084      | 0.064      | 0.132      |
| 0.70  | 0.00  | 0.93            | 0.92      | 0.077     | -0.016    | 0.034            | 0.034      | 0.048      | 0.018      |
| 0.60  | 0.00  | 0.74            | 0.93      | 0.085     | -0.016    | 0.025            | 0.025      | 0.049      | 0.017      |
| 0.50  | 0.00  | 0.75            | 0.94      | 0.094     | -0.017    | 0.032            | 0.032      | 0.057      | 0.018      |
| 0.40  | 0.00  | 0.97            | 0.96      | 0.104     | -0.018    | 0.034            | 0.034      | 0.061      | 0.025      |
| 0.30  | 0.00  | 0.98            | 0.98      | 0.101     | -0.013    | 0.033            | 0.032      | 0.053      | 0.019      |
| 0.20  | 0.00  | 1.00            | 1.00      | 0.105     | -0.014    | 0.035            | 0.034      | 0.053      | 0.020      |
| 0.10  | 0.00  | 1.01            | 1.01      | 0.107     | -0.012    | 0.035            | 0.035      | 0.059      | 0.020      |
| 0.00  | 0.00  | 1.04            | 1.03      | 0.121     | -0.018    | 0.033            | 0.033      | 0.061      | 0.018      |
| -0.10 | 0.00  | 1.07            | 1.06      | 0.106     | -0.021    | 0.039            | 0.039      | 0.053      | 0.020      |
| -0.20 | 0.00  | 1.07            | 1.06      | 0.110     | -0.019    | 0.033            | 0.033      | 0.054      | 0.021      |
| -0.30 | 0.00  | 1.10            | 1.09      | 0.108     | -0.023    | 0.036            | 0.036      | 0.057      | 0.020      |
| -0.40 | 0.00  | 1.12            | 1.12      | 0.106     | -0.021    | 0.033            | 0.034      | 0.055      | 0.018      |
| -0.50 | 0.00  | 1.14            | 1.13      | 0.101     | -0.020    | 0.033            | 0.033      | 0.048      | 0.020      |
| -0.55 | 0.00  | 1.15            | 1.15      | 0.100     | -0.020    | 0.031            | 0.030      | 0.049      | 0.017      |
| -0.60 | 0.00  | 1.17            | 1.16      | 0.094     | -0.021    | 0.032            | 0.032      | 0.048      | 0.019      |
| -0.65 | 0.00  | 1.18            | 1.18      | 0.091     | -0.022    | 0.034            | 0.034      | 0.043      | 0.018      |
| -0.70 | 0.00  | 1.20            | 1.19      | 0.083     | -0.019    | 0.030            | 0.030      | 0.038      | 0.021      |
| -0.75 | 0.00  | 1.21            | 1.21      | 0.065     | -0.022    | 0.027            | 0.027      | 0.033      | 0.020      |
| -0.80 | 0.00  | 1.22            | 1.22      | 0.055     | -0.017    | 0.030            | 0.030      | 0.028      | 0.020      |
| -0.80 | 0.10  | 1.22            | 1.22      | 0.057     | -0.020    | 0.033            | 0.033      | 0.028      | 0.020      |
| -0.75 | 0.10  | 1.20            | 1.20      | 0.068     | -0.017    | 0.037            | 0.033      | 0.034      | 0.018      |
| -0.70 | 0.10  | 1.20            | 1.19      | 0.079     | -0.021    | 0.032            | 0.032      | 0.039      | 0.020      |
| -0.65 | 0.10  | 1.18            | 1.17      | 0.089     | -0.023    | 0.030            | 0.030      | 0.045      | 0.020      |
| -0.60 | 0.10  | 1.17            | 1.16      | 0.076     | -0.022    | 0.029            | 0.029      | 0.048      | 0.011      |
| -0.55 | 0.10  | 1.16            | 1.15      | 0.107     | -0.022    | 0.032            | 0.032      | 0.050      | 0.021      |
| -0.50 | 0.10  | 1.14            | 1.13      | 0.097     | -0.026    | 0.036            | 0.036      | 0.047      | 0.021      |
| -0.40 | 0.10  | 1.12            | 1.11      | 0.102     | -0.024    | 0.031            | 0.035      | 0.052      | 0.020      |
| -0.30 | 0.10  | 1.11            | 1.10      | 0.096     | -0.018    | 0.031            | 0.032      | 0.051      | 0.019      |
| -0.20 | 0.10  | 1.08            | 1.08      | 0.097     | -0.010    | 0.034            | 0.034      | 0.050      | 0.020      |
| -0.10 | 0.10  | 1.05            | 1.05      | 0.099     | -0.018    | 0.034            | 0.033      | 0.056      | 0.020      |
| 0.00  | 0.10  | 1.04            | 1.03      | 0.093     | -0.016    | 0.031            | 0.031      | 0.052      | 0.021      |
| 0.10  | 0.10  | 1.01            | 1.01      | 0.090     | -0.011    | 0.034            | 0.034      | 0.052      | 0.020      |
| 0.20  | 0.10  | 1.00            | 0.99      | 0.096     | -0.013    | 0.036            | 0.025      | 0.052      | 0.020      |
| 0.30  | 0.10  | 0.98            | 0.97      | 0.101     | -0.013    | 0.036            | 0.025      | 0.052      | 0.019      |
| 0.40  | 0.10  | 0.96            | 0.95      | 0.095     | -0.015    | 0.036            | 0.026      | 0.055      | 0.020      |
| 0.50  | 0.10  | 0.94            | 0.94      | 0.085     | -0.012    | 0.033            | 0.033      | 0.048      | 0.019      |
| 0.60  | 0.10  | 0.93            | 0.92      | 0.080     | -0.009    | 0.035            | 0.024      | 0.050      | 0.018      |
| 0.70  | 0.10  | 0.92            | 0.91      | 0.076     | -0.011    | 0.032            | 0.022      | 0.046      | 0.010      |
| 0.80  | 0.10  | 0.89            | 0.89      | 0.061     | -0.010    | 0.029            | 0.030      | 0.050      | 0.022      |
| 0.80  | 0.20  | 0.90            | 0.89      | 0.064     | -0.007    | 0.033            | 0.033      | 0.041      | 0.021      |
| 0.70  | 0.20  | 0.91            | 0.91      | 0.072     | -0.005    | 0.034            | 0.033      | 0.045      | 0.018      |
| 0.60  | 0.20  | 0.93            | 0.77      | 0.079     | -0.009    | 0.033            | 0.033      | 0.052      | 0.017      |
| 0.50  | 0.20  | 0.95            | 0.74      | 0.087     | -0.009    | 0.036            | 0.036      | 0.043      | 0.018      |
| 0.40  | 0.20  | 0.96            | 0.96      | 0.091     | -0.006    | 0.034            | 0.034      | 0.051      | 0.019      |
| 0.30  | 0.20  | 0.98            | 0.98      | 0.091     | -0.011    | 0.033            | 0.037      | 0.049      | 0.016      |
| 0.20  | 0.20  | 0.99            | 0.99      | 0.093     | -0.012    | 0.035            | 0.025      | 0.047      | 0.021      |
| 0.10  | 0.20  | 1.02            | 1.02      | 0.095     | -0.011    | 0.035            | 0.035      | 0.050      | 0.018      |
| 0.00  | 0.20  | 1.04            | 1.03      | 0.102     | -0.015    | 0.030            | 0.038      | 0.050      | 0.015      |
| -0.10 | 0.20  | 1.06            | 1.05      | 0.101     | -0.016    | 0.036            | 0.036      | 0.053      | 0.020      |
| -0.20 | 0.20  | 1.00            | 1.07      | 0.100     | -0.018    | 0.035            | 0.035      | 0.052      | 0.020      |
| -0.30 | 0.20  | 1.10            | 1.09      | 0.098     | -0.015    | 0.035            | 0.035      | 0.052      | 0.021      |
| -0.40 | 0.20  | 1.11            | 1.11      | 0.104     | -0.021    | 0.032            | 0.031      | 0.053      | 0.020      |
| -0.50 | 0.20  | 1.14            | 1.13      | 0.108     | -0.021    | 0.034            | 0.034      | 0.047      | 0.020      |
| -0.55 | 0.20  | 1.15            | 1.15      | 0.098     | -0.023    | 0.031            | 0.031      | 0.046      | 0.020      |
| -0.60 | 0.20  | 1.16            | 1.15      | 0.095     | -0.026    | 0.033            | 0.032      | 0.043      | 0.020      |
| -0.65 | 0.20  | 1.18            | 1.17      | 0.085     | -0.026    | 0.032            | 0.032      | 0.040      | 0.021      |
| -0.70 | 0.20  | 1.19            | 1.18      | 0.080     | -0.022    | 0.032            | 0.032      | 0.042      | 0.018      |
| -0.75 | 0.20  | 1.21            | 1.20      | 0.077     | -0.026    | 0.031            | 0.031      | 0.035      | 0.019      |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | 0.20 | 1.21            | 1.21      | 0.064     | -0.023    | 0.032      | 0.032 | 0.031 | 0.021 |
| -0.80 | 0.30 | 1.22            | 1.21      | 0.063     | -0.027    | 0.032      | 0.032 | 0.026 | 0.018 |
| -0.75 | 0.30 | 1.20            | 1.20      | 0.072     | -0.031    | 0.030      | 0.030 | 0.031 | 0.019 |
| -0.70 | 0.30 | 1.19            | 1.18      | 0.084     | -0.028    | 0.029      | 0.029 | 0.035 | 0.020 |
| -0.65 | 0.30 | 1.18            | 1.17      | 0.095     | -0.029    | 0.031      | 0.031 | 0.042 | 0.020 |
| -0.60 | 0.30 | 1.17            | 1.16      | 0.098     | -0.027    | 0.033      | 0.033 | 0.042 | 0.020 |
| -0.55 | 0.30 | 1.15            | 1.14      | 0.098     | -0.026    | 0.031      | 0.031 | 0.043 | 0.020 |
| -0.50 | 0.30 | 1.14            | 1.13      | 0.102     | -0.024    | 0.031      | 0.031 | 0.049 | 0.017 |
| -0.40 | 0.30 | 1.12            | 1.11      | 0.116     | -0.022    | 0.033      | 0.033 | 0.050 | 0.017 |
| -0.30 | 0.30 | 1.12            | 1.11      | 0.100     | -0.023    | 0.034      | 0.034 | 0.049 | 0.019 |
| -0.20 | 0.30 | 1.08            | 1.08      | 0.103     | -0.020    | 0.034      | 0.034 | 0.057 | 0.020 |
| -0.10 | 0.30 | 1.06            | 1.06      | 0.097     | -0.018    | 0.036      | 0.036 | 0.050 | 0.021 |
| 0.00  | 0.30 | 1.04            | 1.03      | 0.090     | -0.010    | 0.033      | 0.033 | 0.045 | 0.021 |
| 0.10  | 0.30 | 1.03            | 1.02      | 0.093     | -0.011    | 0.035      | 0.036 | 0.045 | 0.017 |
| 0.20  | 0.30 | 1.01            | 1.01      | 0.086     | -0.010    | 0.034      | 0.034 | 0.044 | 0.019 |
| 0.30  | 0.30 | 0.99            | 0.98      | 0.086     | -0.007    | 0.035      | 0.035 | 0.043 | 0.020 |
| 0.40  | 0.30 | 0.97            | 0.96      | 0.088     | -0.008    | 0.034      | 0.034 | 0.045 | 0.019 |
| 0.50  | 0.30 | 0.95            | 0.94      | 0.078     | -0.005    | 0.032      | 0.033 | 0.042 | 0.019 |
| 0.60  | 0.30 | 0.94            | 0.94      | 0.075     | -0.005    | 0.034      | 0.034 | 0.043 | 0.020 |
| 0.70  | 0.30 | 0.92            | 0.92      | 0.069     | -0.004    | 0.032      | 0.032 | 0.040 | 0.018 |
| 0.80  | 0.30 | 0.90            | 0.89      | 0.062     | 0.000     | 0.035      | 0.035 | 0.039 | 0.020 |
| 0.80  | 0.40 | 0.89            | 0.87      | 0.062     | -0.004    | 0.030      | 0.030 | 0.041 | 0.020 |
| 0.70  | 0.40 | 0.91            | 0.91      | 0.065     | -0.002    | 0.030      | 0.030 | 0.030 | 0.017 |
| 0.60  | 0.40 | 0.93            | 0.92      | 0.069     | -0.002    | 0.036      | 0.036 | 0.041 | 0.019 |
| 0.50  | 0.40 | 0.96            | 0.95      | 0.070     | -0.001    | 0.034      | 0.034 | 0.043 | 0.019 |
| 0.40  | 0.40 | 0.97            | 0.97      | 0.081     | -0.004    | 0.035      | 0.035 | 0.042 | 0.019 |
| 0.30  | 0.40 | 0.97            | 0.97      | 0.071     | -0.008    | 0.037      | 0.036 | 0.048 | 0.019 |
| 0.20  | 0.40 | 1.01            | 1.00      | 0.092     | -0.007    | 0.035      | 0.035 | 0.049 | 0.019 |
| 0.10  | 0.40 | 1.05            | 1.02      | 0.094     | -0.012    | 0.034      | 0.034 | 0.050 | 0.018 |
| 0.00  | 0.40 | 1.04            | 1.04      | 0.098     | -0.012    | 0.034      | 0.034 | 0.049 | 0.019 |
| -0.10 | 0.40 | 1.06            | 1.05      | 0.101     | -0.017    | 0.035      | 0.035 | 0.049 | 0.020 |
| -0.20 | 0.40 | 1.08            | 1.08      | 0.107     | -0.019    | 0.035      | 0.025 | 0.043 | 0.017 |
| -0.30 | 0.40 | 1.10            | 1.05      | 0.100     | -0.020    | 0.035      | 0.075 | 0.045 | 0.020 |
| -0.40 | 0.40 | 1.17            | 1.17      | 0.114     | -0.027    | 0.034      | 0.034 | 0.057 | 0.020 |
| -0.50 | 0.40 | 1.15            | 1.14      | 0.107     | -0.029    | 0.031      | 0.031 | 0.057 | 0.019 |
| -0.55 | 0.40 | 1.16            | 1.16      | 0.104     | -0.027    | 0.033      | 0.073 | 0.045 | 0.014 |
| -0.60 | 0.40 | 1.18            | 1.17      | 0.106     | -0.027    | 0.033      | 0.023 | 0.047 | 0.020 |
| -0.65 | 0.40 | 1.19            | 1.19      | 0.097     | -0.035    | 0.033      | 0.032 | 0.026 | 0.020 |
| -0.70 | 0.40 | 1.20            | 1.20      | 0.083     | -0.034    | 0.032      | 0.032 | 0.076 | 0.020 |
| -0.75 | 0.40 | 1.22            | 1.22      | 0.075     | -0.034    | 0.032      | 0.032 | 0.018 | 0.018 |
| -0.80 | 0.40 | 1.23            | 1.23      | 0.067     | -0.036    | 0.037      | 0.032 | 0.044 | 0.020 |
| -0.80 | 0.50 | 1.27            | 1.22      | 0.074     | -0.039    | 0.034      | 0.034 | 0.028 | 0.020 |
| -0.75 | 0.50 | 1.22            | 1.22      | 0.082     | -0.039    | 0.029      | 0.029 | 0.030 | 0.020 |
| -0.70 | 0.50 | 1.20            | 1.20      | 0.070     | 0.036     | 0.031      | 0.031 | 0.038 | 0.020 |
| -0.65 | 0.50 | 1.19            | 1.18      | 0.102     | -0.037    | 0.018      | 0.020 | 0.041 | 0.019 |
| -0.60 | 0.50 | 1.17            | 1.17      | 0.106     | -0.033    | 0.030      | 0.031 | 0.045 | 0.020 |
| -0.55 | 0.50 | 1.17            | 1.17      | 0.108     | -0.032    | 0.036      | 0.036 | 0.049 | 0.021 |
| -0.50 | 0.50 | 1.15            | 1.15      | 0.106     | -0.027    | 0.032      | 0.032 | 0.047 | 0.018 |
| -0.40 | 0.50 | 1.13            | 1.13      | 0.100     | -0.025    | 0.032      | 0.032 | 0.046 | 0.020 |
| -0.30 | 0.50 | 1.11            | 1.10      | 0.101     | -0.027    | 0.033      | 0.033 | 0.047 | 0.020 |
| -0.20 | 0.50 | 1.08            | 1.08      | 0.101     | -0.025    | 0.035      | 0.035 | 0.046 | 0.019 |
| -0.10 | 0.50 | 1.07            | 1.06      | 0.108     | -0.019    | 0.033      | 0.033 | 0.051 | 0.019 |
| 0.00  | 0.50 | 1.04            | 1.04      | 0.092     | -0.012    | 0.035      | 0.034 | 0.047 | 0.019 |
| 0.10  | 0.50 | 1.03            | 1.02      | 0.084     | -0.010    | 0.036      | 0.036 | 0.041 | 0.020 |
| 0.20  | 0.50 | 1.01            | 1.00      | 0.085     | -0.010    | 0.032      | 0.032 | 0.041 | 0.019 |
| 0.30  | 0.50 | 0.99            | 0.98      | 0.080     | -0.005    | 0.035      | 0.035 | 0.045 | 0.019 |
| 0.40  | 0.50 | 0.96            | 0.95      | 0.082     | -0.007    | 0.034      | 0.034 | 0.045 | 0.019 |
| 0.50  | 0.50 | 0.95            | 0.94      | 0.081     | -0.010    | 0.029      | 0.029 | 0.045 | 0.020 |
| 0.60  | 0.50 | 0.97            | 0.91      | 0.067     | -0.007    | 0.027      | 0.027 | 0.039 | 0.019 |
| 0.70  | 0.50 | 0.89            | 0.89      | 0.067     | -0.001    | 0.032      | 0.032 | 0.039 | 0.013 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}$ rms | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'$ rms | $u'$  | $v'$  | $w'$  |
|----------|----------|---------------|-----------|-----------|-----------|----------------|-------|-------|-------|
| 0.80     | 0.50     | 0.87          | 0.87      | 0.061     | 0.001     | 0.030          | 0.030 | 0.040 | 0.021 |
| 0.80     | 0.60     | 0.87          | 0.87      | 0.055     | 0.005     | 0.026          | 0.026 | 0.037 | 0.019 |
| 0.70     | 0.60     | 0.89          | 0.88      | 0.063     | 0.004     | 0.025          | 0.025 | 0.037 | 0.018 |
| 0.60     | 0.60     | 0.90          | 0.89      | 0.066     | 0.001     | 0.024          | 0.024 | 0.036 | 0.018 |
| 0.50     | 0.60     | 0.91          | 0.90      | 0.073     | -0.004    | 0.025          | 0.025 | 0.039 | 0.018 |
| 0.40     | 0.60     | 0.94          | 0.93      | 0.082     | -0.006    | 0.032          | 0.032 | 0.034 | 0.020 |
| 0.30     | 0.60     | 0.97          | 0.96      | 0.090     | -0.013    | 0.030          | 0.030 | 0.041 | 0.017 |
| 0.20     | 0.60     | 0.97          | 0.99      | 0.075     | -0.013    | 0.028          | 0.028 | 0.047 | 0.020 |
| 0.10     | 0.60     | 1.02          | 1.02      | 0.098     | -0.007    | 0.039          | 0.040 | 0.044 | 0.018 |
| 0.00     | 0.60     | 1.04          | 1.03      | 0.089     | -0.009    | 0.036          | 0.036 | 0.037 | 0.020 |
| -0.10    | 0.60     | 1.07          | 1.06      | 0.094     | -0.012    | 0.033          | 0.033 | 0.040 | 0.022 |
| -0.20    | 0.60     | 1.09          | 1.08      | 0.110     | -0.025    | 0.038          | 0.038 | 0.046 | 0.021 |
| -0.30    | 0.60     | 1.11          | 1.10      | 0.107     | -0.029    | 0.034          | 0.034 | 0.046 | 0.019 |
| -0.40    | 0.60     | 1.12          | 1.12      | 0.097     | -0.029    | 0.035          | 0.035 | 0.048 | 0.021 |
| -0.50    | 0.60     | 1.15          | 1.14      | 0.105     | -0.029    | 0.032          | 0.031 | 0.048 | 0.021 |
| -0.55    | 0.60     | 1.17          | 1.16      | 0.108     | -0.032    | 0.031          | 0.031 | 0.050 | 0.019 |
| -0.60    | 0.60     | 1.17          | 1.17      | 0.098     | -0.033    | 0.028          | 0.028 | 0.046 | 0.021 |
| -0.65    | 0.60     | 1.19          | 1.18      | 0.101     | -0.035    | 0.031          | 0.031 | 0.044 | 0.021 |
| -0.70    | 0.60     | 1.20          | 1.20      | 0.094     | -0.037    | 0.033          | 0.033 | 0.041 | 0.020 |
| -0.75    | 0.60     | 1.22          | 1.21      | 0.087     | -0.040    | 0.027          | 0.026 | 0.034 | 0.020 |
| -0.80    | 0.60     | 1.23          | 1.23      | 0.079     | -0.041    | 0.029          | 0.029 | 0.026 | 0.022 |
| -0.80    | 0.70     | 1.25          | 1.22      | 0.091     | -0.045    | 0.038          | 0.038 | 0.026 | 0.023 |
| -0.75    | 0.70     | 1.22          | 1.21      | 0.093     | -0.038    | 0.029          | 0.029 | 0.031 | 0.026 |
| -0.70    | 0.70     | 1.20          | 1.19      | 0.099     | -0.035    | 0.033          | 0.033 | 0.035 | 0.020 |
| -0.65    | 0.70     | 1.18          | 1.18      | 0.101     | -0.031    | 0.032          | 0.033 | 0.036 | 0.020 |
| -0.60    | 0.70     | 1.17          | 1.17      | 0.104     | -0.034    | 0.031          | 0.032 | 0.041 | 0.020 |
| -0.55    | 0.70     | 1.16          | 1.16      | 0.109     | -0.031    | 0.031          | 0.031 | 0.050 | 0.022 |
| -0.50    | 0.70     | 1.15          | 1.15      | 0.102     | -0.032    | 0.032          | 0.031 | 0.046 | 0.019 |
| -0.40    | 0.70     | 1.13          | 1.12      | 0.096     | -0.026    | 0.030          | 0.030 | 0.044 | 0.010 |
| -0.30    | 0.70     | 1.11          | 1.10      | 0.079     | -0.033    | 0.035          | 0.034 | 0.045 | 0.009 |
| -0.20    | 0.70     | 1.07          | 1.07      | 0.087     | -0.026    | 0.032          | 0.031 | 0.043 | 0.007 |
| -0.10    | 0.70     | 1.03          | 1.03      | 0.079     | -0.016    | 0.036          | 0.026 | 0.037 | 0.023 |
| 0.00     | 0.70     | 1.01          | 1.01      | 0.079     | -0.012    | 0.029          | 0.029 | 0.035 | 0.021 |
| 0.10     | 0.70     | 0.97          | 0.97      | 0.085     | -0.012    | 0.030          | 0.030 | 0.028 | 0.021 |
| 0.20     | 0.70     | 0.96          | 0.95      | 0.087     | -0.011    | 0.028          | 0.028 | 0.039 | 0.020 |
| 0.30     | 0.70     | 0.94          | 0.94      | 0.084     | -0.006    | 0.024          | 0.024 | 0.038 | 0.019 |
| 0.40     | 0.70     | 0.94          | 0.93      | 0.084     | -0.005    | 0.024          | 0.024 | 0.036 | 0.019 |
| 0.50     | 0.70     | 0.92          | 0.92      | 0.076     | -0.007    | 0.026          | 0.026 | 0.037 | 0.020 |
| 0.60     | 0.70     | 0.91          | 0.90      | 0.069     | -0.001    | 0.027          | 0.026 | 0.037 | 0.021 |
| 0.70     | 0.70     | 0.88          | 0.88      | 0.063     | 0.007     | 0.027          | 0.027 | 0.038 | 0.018 |
| 0.80     | 0.70     | 0.87          | 0.87      | 0.057     | 0.006     | 0.029          | 0.029 | 0.041 | 0.021 |
| 0.90     | 0.80     | 0.86          | 0.86      | 0.050     | 0.009     | 0.033          | 0.034 | 0.045 | 0.029 |
| 0.70     | 0.80     | 0.88          | 0.88      | 0.050     | 0.012     | 0.029          | 0.029 | 0.032 | 0.020 |
| 0.60     | 0.80     | 0.90          | 0.90      | 0.065     | 0.004     | 0.030          | 0.030 | 0.036 | 0.020 |
| 0.50     | 0.80     | 0.92          | 0.91      | 0.077     | -0.001    | 0.028          | 0.028 | 0.037 | 0.023 |
| 0.40     | 0.80     | 0.74          | 0.93      | 0.075     | -0.008    | 0.028          | 0.028 | 0.034 | 0.024 |
| 0.30     | 0.80     | 0.95          | 0.95      | 0.081     | -0.017    | 0.032          | 0.032 | 0.036 | 0.023 |
| 0.20     | 0.80     | 0.97          | 0.96      | 0.082     | -0.018    | 0.030          | 0.030 | 0.042 | 0.023 |
| 0.10     | 0.80     | 0.94          | 0.94      | 0.087     | -0.016    | 0.030          | 0.030 | 0.038 | 0.021 |
| 0.00     | 0.80     | 0.95          | 0.75      | 0.067     | -0.015    | 0.028          | 0.028 | 0.036 | 0.022 |
| -0.10    | 0.80     | 0.99          | 0.90      | 0.070     | -0.010    | 0.032          | 0.032 | 0.042 | 0.026 |
| -0.20    | 0.80     | 1.03          | 1.03      | 0.083     | -0.026    | 0.029          | 0.028 | 0.045 | 0.024 |
| -0.30    | 0.80     | 1.07          | 1.06      | 0.084     | -0.026    | 0.029          | 0.029 | 0.047 | 0.022 |
| -0.40    | 0.80     | 1.11          | 1.11      | 0.089     | -0.023    | 0.030          | 0.030 | 0.042 | 0.020 |
| -0.50    | 0.80     | 1.15          | 1.14      | 0.091     | -0.017    | 0.027          | 0.027 | 0.040 | 0.021 |
| -0.55    | 0.80     | 1.16          | 1.15      | 0.103     | -0.025    | 0.032          | 0.032 | 0.042 | 0.021 |
| -0.60    | 0.80     | 1.17          | 1.16      | 0.104     | -0.028    | 0.031          | 0.032 | 0.044 | 0.021 |
| -0.65    | 0.80     | 1.18          | 1.18      | 0.078     | -0.026    | 0.031          | 0.031 | 0.041 | 0.022 |
| -0.70    | 0.80     | 1.19          | 1.19      | 0.104     | -0.025    | 0.033          | 0.034 | 0.038 | 0.023 |
| -0.75    | 0.80     | 1.20          | 1.19      | 0.101     | -0.028    | 0.038          | 0.038 | 0.034 | 0.023 |

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'rms</u> | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|--------------|-----------|-----------|-----------|
| -0.80    | 0.80     | 1.17        | 1.17     | 0.098    | -0.039   | 0.048        | 0.048     | 0.029     | 0.032     |
| -0.80    | 0.80     | 1.18        | 1.18     | 0.097    | -0.040   | 0.054        | 0.054     | 0.028     | 0.029     |
| -0.80    | 0.70     | 1.22        | 1.22     | 0.087    | -0.040   | 0.035        | 0.035     | 0.025     | 0.022     |
| -0.80    | 0.60     | 1.23        | 1.22     | 0.082    | -0.038   | 0.028        | 0.028     | 0.028     | 0.021     |
| -0.80    | 0.50     | 1.23        | 1.23     | 0.071    | -0.041   | 0.031        | 0.031     | 0.028     | 0.021     |
| -0.80    | 0.40     | 1.22        | 1.22     | 0.067    | -0.041   | 0.031        | 0.031     | 0.027     | 0.021     |
| -0.80    | 0.30     | 1.23        | 1.23     | 0.063    | -0.027   | 0.032        | 0.032     | 0.027     | 0.021     |
| -0.80    | 0.20     | 1.22        | 1.22     | 0.060    | -0.021   | 0.034        | 0.034     | 0.029     | 0.019     |
| -0.80    | 0.10     | 1.22        | 1.22     | 0.055    | -0.017   | 0.031        | 0.031     | 0.029     | 0.017     |
| -0.80    | 0.00     | 1.22        | 1.22     | 0.052    | -0.015   | 0.032        | 0.032     | 0.030     | 0.018     |
| -0.80    | -0.10    | 1.22        | 1.22     | 0.048    | -0.010   | 0.027        | 0.027     | 0.032     | 0.010     |
| -0.80    | -0.20    | 1.23        | 1.22     | 0.055    | -0.006   | 0.027        | 0.027     | 0.030     | 0.017     |
| -0.80    | -0.30    | 1.22        | 1.22     | 0.061    | -0.004   | 0.029        | 0.028     | 0.030     | 0.020     |
| -0.80    | -0.40    | 1.22        | 1.22     | 0.067    | 0.003    | 0.031        | 0.031     | 0.033     | 0.018     |
| -0.80    | -0.50    | 1.22        | 1.22     | 0.067    | 0.002    | 0.035        | 0.035     | 0.030     | 0.020     |
| -0.80    | -0.60    | 1.22        | 1.22     | 0.074    | 0.008    | 0.031        | 0.031     | 0.030     | 0.019     |
| -0.80    | -0.70    | 1.22        | 1.22     | 0.081    | 0.012    | 0.034        | 0.034     | 0.032     | 0.021     |
| -0.80    | -0.80    | 1.20        | 1.20     | 0.080    | -0.001   | 0.052        | 0.052     | 0.032     | 0.024     |
| -0.90    | 0.80     | 1.11        | 1.10     | 0.064    | -0.073   | 0.051        | 0.051     | 0.032     | 0.035     |
| -0.90    | 0.70     | 1.14        | 1.14     | 0.061    | -0.062   | 0.047        | 0.047     | 0.032     | 0.033     |
| -0.90    | 0.60     | 1.16        | 1.16     | 0.053    | -0.055   | 0.051        | 0.052     | 0.028     | 0.031     |
| -0.90    | 0.50     | 1.18        | 1.18     | 0.045    | -0.042   | 0.056        | 0.057     | 0.030     | 0.026     |
| -0.90    | 0.40     | 1.18        | 1.18     | 0.037    | -0.032   | 0.051        | 0.051     | 0.027     | 0.027     |
| -0.90    | 0.30     | 1.19        | 1.19     | 0.039    | -0.024   | 0.050        | 0.050     | 0.028     | 0.022     |
| -0.90    | 0.20     | 1.19        | 1.19     | 0.037    | -0.017   | 0.060        | 0.060     | 0.025     | 0.025     |
| -0.90    | 0.10     | 1.18        | 1.18     | 0.040    | -0.011   | 0.066        | 0.066     | 0.024     | 0.025     |
| -0.90    | 0.00     | 1.18        | 1.18     | 0.047    | -0.005   | 0.062        | 0.062     | 0.023     | 0.020     |
| -0.90    | -0.10    | 1.17        | 1.17     | 0.039    | 0.001    | 0.056        | 0.056     | 0.025     | 0.026     |
| -0.90    | -0.20    | 1.19        | 1.19     | 0.036    | 0.005    | 0.062        | 0.062     | 0.034     | 0.022     |
| -0.90    | -0.30    | 1.20        | 1.20     | 0.038    | 0.011    | 0.051        | 0.051     | 0.029     | 0.022     |
| -0.90    | -0.40    | 1.19        | 1.19     | 0.050    | 0.015    | 0.047        | 0.047     | 0.024     | 0.021     |
| -0.90    | -0.50    | 1.18        | 1.18     | 0.054    | 0.020    | 0.056        | 0.056     | 0.026     | 0.024     |
| -0.90    | -0.60    | 1.16        | 1.16     | 0.054    | 0.034    | 0.053        | 0.052     | 0.028     | 0.025     |
| -0.90    | -0.70    | 1.13        | 1.13     | 0.067    | 0.040    | 0.064        | 0.055     | 0.037     | 0.172     |
| 0.90     | -0.80    | 1.11        | 1.10     | 0.054    | 0.048    | 0.050        | 0.050     | 0.032     | 0.034     |
| -0.93    | 0.80     | 1.04        | 1.04     | 0.050    | -0.087   | 0.073        | 0.073     | 0.030     | 0.038     |
| -0.93    | 0.70     | 1.05        | 1.04     | 0.051    | -0.070   | 0.069        | 0.069     | 0.037     | 0.041     |
| -0.93    | 0.60     | 1.10        | 1.09     | 0.037    | -0.063   | 0.050        | 0.050     | 0.027     | 0.036     |
| -0.93    | 0.50     | 1.11        | 1.11     | 0.036    | -0.047   | 0.054        | 0.054     | 0.028     | 0.034     |
| -0.93    | 0.40     | 1.13        | 1.13     | 0.029    | -0.040   | 0.045        | 0.046     | 0.026     | 0.029     |
| -0.93    | 0.30     | 1.14        | 1.14     | 0.022    | -0.031   | 0.044        | 0.044     | 0.026     | 0.030     |
| -0.93    | 0.20     | 1.14        | 1.14     | 0.021    | -0.023   | 0.045        | 0.045     | 0.027     | 0.031     |
| -0.93    | 0.10     | 1.13        | 1.13     | 0.024    | -0.010   | 0.057        | 0.051     | 0.023     | 0.030     |
| -0.93    | 0.00     | 1.13        | 1.12     | 0.026    | -0.007   | 0.051        | 0.051     | 0.030     | 0.028     |
| -0.93    | -0.10    | 1.14        | 1.13     | 0.020    | 0.004    | 0.048        | 0.048     | 0.026     | 0.027     |
| -0.93    | -0.20    | 1.13        | 1.13     | 0.026    | 0.007    | 0.047        | 0.047     | 0.027     | 0.028     |
| 0.93     | -0.30    | 1.13        | 1.13     | 0.030    | 0.007    | 0.043        | 0.043     | 0.027     | 0.027     |
| -0.93    | -0.40    | 1.13        | 1.13     | 0.034    | 0.017    | 0.050        | 0.050     | 0.029     | 0.026     |
| -0.93    | -0.50    | 1.12        | 1.12     | 0.029    | 0.024    | 0.046        | 0.046     | 0.028     | 0.021     |
| -0.93    | -0.60    | 1.07        | 1.09     | 0.044    | 0.034    | 0.049        | 0.049     | 0.029     | 0.027     |
| -0.93    | -0.70    | 1.03        | 1.07     | 0.044    | 0.053    | 0.060        | 0.061     | 0.032     | 0.041     |
| -0.93    | -0.80    | 1.01        | 1.01     | 0.036    | 0.060    | 0.063        | 0.063     | 0.043     | 0.037     |
| 0.88     | 0.80     | 0.82        | 0.81     | 0.045    | 0.011    | 0.057        | 0.050     | 0.054     | 0.038     |
| 0.88     | 0.70     | 0.83        | 0.87     | 0.039    | 0.009    | 0.045        | 0.045     | 0.054     | 0.039     |
| 0.88     | 0.60     | 0.85        | 0.85     | 0.075    | 0.008    | 0.032        | 0.031     | 0.057     | 0.021     |
| 0.88     | 0.50     | 0.85        | 0.84     | 0.050    | -0.001   | 0.031        | 0.032     | 0.045     | 0.021     |
| 0.88     | 0.40     | 0.85        | 0.85     | 0.052    | -0.003   | 0.043        | 0.043     | 0.049     | 0.022     |
| 0.88     | 0.30     | 0.85        | 0.85     | 0.057    | -0.002   | 0.048        | 0.048     | 0.045     | 0.027     |
| 0.88     | 0.20     | 0.86        | 0.86     | 0.062    | -0.008   | 0.037        | 0.038     | 0.056     | 0.028     |
| 0.88     | 0.10     | 0.86        | 0.85     | 0.046    | -0.007   | 0.042        | 0.042     | 0.042     | 0.032     |

| <i>y</i> | <i>z</i> | <i>U</i><br>rms | <i>U</i> | <i>V</i> | <i>W</i> | <i>U'</i> rms | <i>u'</i> | <i>v'</i> | <i>w'</i> |
|----------|----------|-----------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.88     | 0.00     | 0.86            | 0.86     | 0.055    | -0.012   | 0.038         | 0.039     | 0.038     | 0.029     |
| 0.88     | -0.10    | 0.86            | 0.85     | 0.052    | -0.014   | 0.044         | 0.045     | 0.044     | 0.030     |
| 0.88     | -0.20    | 0.85            | 0.84     | 0.050    | -0.015   | 0.058         | 0.059     | 0.044     | 0.031     |
| 0.88     | -0.30    | 0.86            | 0.85     | 0.060    | -0.018   | 0.038         | 0.038     | 0.049     | 0.035     |
| 0.88     | -0.40    | 0.84            | 0.83     | 0.056    | -0.023   | 0.060         | 0.061     | 0.050     | 0.038     |
| 0.88     | -0.50    | 0.85            | 0.85     | 0.062    | -0.030   | 0.053         | 0.053     | 0.053     | 0.034     |
| 0.88     | -0.60    | 0.84            | 0.83     | 0.065    | -0.030   | 0.062         | 0.062     | 0.051     | 0.034     |
| 0.88     | -0.70    | 0.83            | 0.83     | 0.072    | -0.035   | 0.070         | 0.070     | 0.058     | 0.036     |
| 0.88     | -0.80    | 0.78            | 0.78     | 0.060    | -0.036   | 0.082         | 0.083     | 0.057     | 0.042     |

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Table D-4, Station 8,  $\theta = 60^\circ$

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.00  | 0.88            | 0.88      | 0.058     | -0.003    | 0.042      | 0.042 | 0.048 | 0.028 |
| 0.70  | 0.00  | 0.92            | 0.92      | 0.085     | -0.009    | 0.034      | 0.034 | 0.053 | 0.023 |
| 0.60  | 0.00  | 0.93            | 0.93      | 0.059     | -0.006    | 0.032      | 0.032 | 0.044 | 0.019 |
| 0.50  | 0.00  | 0.95            | 0.95      | 0.085     | -0.009    | 0.034      | 0.034 | 0.052 | 0.019 |
| 0.40  | 0.00  | 0.97            | 0.96      | 0.075     | -0.005    | 0.034      | 0.034 | 0.045 | 0.020 |
| 0.30  | 0.00  | 0.99            | 0.99      | 0.075     | -0.005    | 0.032      | 0.032 | 0.048 | 0.020 |
| 0.20  | 0.00  | 1.01            | 1.01      | 0.074     | -0.005    | 0.035      | 0.027 | 0.046 | 0.121 |
| 0.10  | 0.00  | 1.03            | 1.02      | 0.092     | -0.005    | 0.032      | 0.032 | 0.048 | 0.018 |
| 0.00  | 0.00  | 1.04            | 1.04      | 0.079     | -0.001    | 0.027      | 0.027 | 0.049 | 0.016 |
| -0.10 | 0.00  | 1.06            | 1.06      | 0.079     | -0.003    | 0.031      | 0.031 | 0.049 | 0.019 |
| -0.20 | 0.00  | 1.09            | 1.08      | 0.084     | -0.003    | 0.028      | 0.028 | 0.044 | 0.018 |
| -0.30 | 0.00  | 1.11            | 1.10      | 0.090     | -0.004    | 0.029      | 0.029 | 0.049 | 0.018 |
| -0.40 | 0.00  | 1.13            | 1.13      | 0.070     | -0.003    | 0.027      | 0.026 | 0.043 | 0.017 |
| -0.50 | 0.00  | 1.15            | 1.14      | 0.087     | -0.004    | 0.028      | 0.027 | 0.037 | 0.017 |
| -0.55 | 0.00  | 1.16            | 1.16      | 0.089     | -0.003    | 0.029      | 0.029 | 0.039 | 0.017 |
| -0.60 | 0.00  | 1.17            | 1.17      | 0.083     | -0.004    | 0.027      | 0.027 | 0.032 | 0.018 |
| -0.65 | 0.00  | 1.19            | 1.17      | 0.082     | -0.001    | 0.027      | 0.027 | 0.030 | 0.016 |
| -0.70 | 0.00  | 1.20            | 1.20      | 0.074     | -0.003    | 0.024      | 0.024 | 0.026 | 0.017 |
| -0.75 | 0.00  | 1.22            | 1.22      | 0.066     | -0.002    | 0.024      | 0.024 | 0.024 | 0.017 |
| -0.80 | 0.00  | 1.21            | 1.21      | 0.066     | 0.000     | 0.038      | 0.038 | 0.020 | 0.016 |
| -0.80 | -0.10 | 1.22            | 1.22      | 0.065     | 0.006     | 0.030      | 0.030 | 0.024 | 0.016 |
| -0.75 | -0.10 | 1.21            | 1.21      | 0.076     | 0.006     | 0.029      | 0.029 | 0.020 | 0.016 |
| -0.70 | -0.10 | 1.20            | 1.19      | 0.082     | -0.002    | 0.027      | 0.029 | 0.028 | 0.018 |
| -0.65 | -0.10 | 1.19            | 1.18      | 0.094     | -0.008    | 0.030      | 0.030 | 0.028 | 0.020 |
| -0.60 | -0.10 | 1.18            | 1.17      | 0.090     | -0.005    | 0.028      | 0.029 | 0.033 | 0.018 |
| -0.55 | -0.10 | 1.16            | 1.16      | 0.096     | -0.009    | 0.032      | 0.032 | 0.033 | 0.020 |
| -0.50 | -0.10 | 1.15            | 1.15      | 0.096     | -0.005    | 0.029      | 0.029 | 0.037 | 0.017 |
| -0.40 | -0.10 | 1.13            | 1.13      | 0.108     | -0.007    | 0.028      | 0.028 | 0.042 | 0.020 |
| -0.30 | -0.10 | 1.11            | 1.10      | 0.110     | -0.008    | 0.031      | 0.031 | 0.041 | 0.021 |
| -0.20 | -0.10 | 1.08            | 1.08      | 0.112     | -0.010    | 0.028      | 0.027 | 0.048 | 0.020 |
| -0.10 | -0.10 | 1.06            | 1.05      | 0.109     | -0.009    | 0.034      | 0.034 | 0.051 | 0.020 |
| 0.00  | -0.10 | 1.04            | 1.04      | 0.108     | -0.006    | 0.033      | 0.034 | 0.044 | 0.020 |
| 0.10  | -0.10 | 1.03            | 1.02      | 0.102     | -0.009    | 0.034      | 0.034 | 0.049 | 0.021 |
| 0.20  | -0.10 | 1.00            | 1.00      | 0.099     | -0.010    | 0.033      | 0.033 | 0.050 | 0.019 |
| 0.30  | -0.10 | 0.98            | 0.97      | 0.096     | -0.013    | 0.033      | 0.033 | 0.050 | 0.023 |
| 0.40  | -0.10 | 0.96            | 0.96      | 0.101     | -0.008    | 0.031      | 0.031 | 0.052 | 0.022 |
| 0.50  | -0.10 | 0.95            | 0.94      | 0.085     | -0.012    | 0.029      | 0.029 | 0.046 | 0.024 |
| 0.60  | -0.10 | 0.93            | 0.93      | 0.090     | -0.013    | 0.032      | 0.032 | 0.049 | 0.021 |
| 0.70  | -0.10 | 0.91            | 0.91      | 0.085     | -0.014    | 0.032      | 0.032 | 0.052 | 0.020 |
| 0.80  | -0.10 | 0.88            | 0.88      | 0.082     | -0.010    | 0.037      | 0.037 | 0.047 | 0.026 |
| 0.80  | -0.20 | 0.88            | 0.87      | 0.051     | -0.018    | 0.037      | 0.037 | 0.056 | 0.025 |
| 0.70  | -0.20 | 0.91            | 0.90      | 0.094     | -0.017    | 0.032      | 0.031 | 0.045 | 0.022 |
| 0.60  | -0.20 | 0.93            | 0.92      | 0.096     | -0.013    | 0.034      | 0.034 | 0.052 | 0.021 |
| 0.50  | -0.20 | 0.95            | 0.94      | 0.108     | -0.017    | 0.034      | 0.035 | 0.051 | 0.024 |
| 0.40  | -0.20 | 0.96            | 0.95      | 0.109     | -0.018    | 0.032      | 0.032 | 0.051 | 0.021 |
| 0.30  | -0.20 | 0.98            | 0.98      | 0.090     | -0.019    | 0.029      | 0.029 | 0.048 | 0.022 |
| 0.20  | -0.20 | 1.00            | 0.99      | 0.111     | -0.014    | 0.033      | 0.033 | 0.052 | 0.020 |
| 0.10  | -0.20 | 1.07            | 1.01      | 0.113     | -0.014    | 0.033      | 0.033 | 0.052 | 0.020 |
| 0.00  | -0.20 | 1.04            | 1.04      | 0.118     | -0.016    | 0.032      | 0.032 | 0.048 | 0.023 |
| -0.10 | -0.20 | 1.06            | 1.05      | 0.122     | -0.012    | 0.032      | 0.032 | 0.047 | 0.022 |
| -0.20 | -0.20 | 1.08            | 1.08      | 0.112     | -0.014    | 0.029      | 0.029 | 0.041 | 0.022 |
| 0.30  | -0.20 | 1.11            | 1.10      | 0.114     | -0.015    | 0.028      | 0.028 | 0.041 | 0.022 |
| -0.40 | -0.10 | 1.13            | 1.13      | 0.111     | -0.014    | 0.026      | 0.026 | 0.032 | 0.020 |
| -0.50 | -0.20 | 1.16            | 1.15      | 0.110     | -0.014    | 0.022      | 0.022 | 0.035 | 0.022 |
| -0.55 | -0.20 | 1.17            | 1.16      | 0.105     | -0.012    | 0.022      | 0.022 | 0.031 | 0.023 |
| -0.60 | -0.20 | 1.18            | 1.18      | 0.100     | -0.009    | 0.025      | 0.025 | 0.028 | 0.021 |
| -0.65 | -0.20 | 1.19            | 1.19      | 0.097     | -0.007    | 0.026      | 0.026 | 0.029 | 0.021 |
| -0.70 | -0.20 | 1.21            | 1.21      | 0.091     | 0.000     | 0.024      | 0.024 | 0.023 | 0.018 |
| -0.75 | -0.20 | 1.22            | 1.22      | 0.086     | 0.006     | 0.021      | 0.021 | 0.025 | 0.020 |
| -0.80 | -0.20 | 1.23            | 1.23      | 0.081     | 0.014     | 0.023      | 0.023 | 0.027 | 0.018 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.30 | 1.23            | 1.22      | 0.093     | 0.012     | 0.021      | 0.021 | 0.025 | 0.017 |
| -0.75 | -0.30 | 1.22            | 1.22      | 0.093     | 0.009     | 0.021      | 0.021 | 0.025 | 0.015 |
| -0.70 | -0.30 | 1.21            | 1.21      | 0.100     | 0.004     | 0.026      | 0.026 | 0.028 | 0.014 |
| -0.65 | -0.30 | 1.20            | 1.19      | 0.102     | 0.001     | 0.024      | 0.024 | 0.029 | 0.014 |
| -0.60 | 0.30  | 1.18            | 1.18      | 0.103     | -0.007    | 0.028      | 0.028 | 0.030 | 0.016 |
| -0.55 | -0.30 | 1.17            | 1.17      | 0.104     | -0.012    | 0.029      | 0.029 | 0.032 | 0.019 |
| -0.50 | -0.30 | 1.16            | 1.15      | 0.104     | -0.012    | 0.030      | 0.030 | 0.036 | 0.020 |
| -0.40 | -0.30 | 1.14            | 1.13      | 0.107     | -0.010    | 0.029      | 0.029 | 0.048 | 0.016 |
| -0.30 | -0.30 | 1.11            | 1.11      | 0.105     | -0.010    | 0.026      | 0.026 | 0.051 | 0.018 |
| -0.20 | -0.30 | 1.09            | 1.08      | 0.117     | -0.012    | 0.027      | 0.027 | 0.056 | 0.018 |
| -0.10 | -0.30 | 1.07            | 1.06      | 0.124     | -0.009    | 0.029      | 0.029 | 0.063 | 0.017 |
| 0.00  | -0.30 | 1.06            | 1.05      | 0.131     | -0.017    | 0.031      | 0.031 | 0.060 | 0.021 |
| 0.10  | -0.30 | 1.03            | 1.02      | 0.123     | -0.014    | 0.031      | 0.029 | 0.066 | 0.020 |
| 0.20  | -0.30 | 1.03            | 1.02      | 0.118     | -0.006    | 0.033      | 0.032 | 0.072 | 0.013 |
| 0.30  | -0.30 | 1.00            | 0.98      | 0.127     | -0.012    | 0.028      | 0.028 | 0.068 | 0.022 |
| 0.40  | -0.30 | 0.98            | 0.96      | 0.136     | -0.013    | 0.033      | 0.030 | 0.077 | 0.021 |
| 0.50  | -0.30 | 0.95            | 0.95      | 0.089     | -0.009    | 0.026      | 0.024 | 0.079 | 0.019 |
| 0.60  | -0.30 | 0.93            | 0.93      | 0.068     | -0.001    | 0.022      | 0.020 | 0.081 | 0.016 |
| 0.70  | -0.30 | 0.92            | 0.91      | 0.137     | -0.013    | 0.029      | 0.028 | 0.062 | 0.025 |
| 0.80  | -0.30 | 0.90            | 0.89      | 0.131     | -0.013    | 0.038      | 0.036 | 0.068 | 0.032 |
| 0.80  | -0.40 | 0.90            | 0.88      | 0.116     | -0.016    | 0.042      | 0.039 | 0.083 | 0.030 |
| 0.70  | -0.40 | 0.92            | 0.92      | 0.094     | -0.015    | 0.028      | 0.026 | 0.075 | 0.021 |
| 0.60  | -0.40 | 0.94            | 0.93      | 0.092     | -0.016    | 0.032      | 0.031 | 0.068 | 0.021 |
| 0.50  | -0.40 | 0.95            | 0.94      | 0.076     | -0.014    | 0.032      | 0.030 | 0.075 | 0.019 |
| 0.40  | -0.40 | 0.96            | 0.96      | 0.056     | -0.006    | 0.020      | 0.019 | 0.046 | 0.017 |
| 0.30  | -0.40 | 0.79            | 0.78      | 0.085     | -0.017    | 0.031      | 0.030 | 0.072 | 0.018 |
| 0.20  | 0.40  | 1.03            | 1.02      | 0.098     | -0.009    | 0.071      | 0.059 | 0.077 | 0.012 |
| 0.10  | -0.40 | 1.03            | 1.02      | 0.121     | -0.017    | 0.029      | 0.029 | 0.062 | 0.015 |
| 0.00  | -0.40 | 1.06            | 1.05      | 0.127     | -0.016    | 0.027      | 0.018 | 0.065 | 0.019 |
| -0.10 | -0.40 | 1.07            | 1.06      | 0.112     | -0.015    | 0.032      | 0.031 | 0.068 | 0.019 |
| -0.20 | -0.40 | 1.09            | 1.09      | 0.114     | -0.015    | 0.031      | 0.031 | 0.063 | 0.017 |
| -0.30 | -0.40 | 1.12            | 1.11      | 0.108     | -0.016    | 0.026      | 0.026 | 0.060 | 0.017 |
| -0.40 | -0.40 | 1.14            | 1.13      | 0.102     | -0.014    | 0.026      | 0.026 | 0.052 | 0.017 |
| -0.50 | -0.40 | 1.16            | 1.15      | 0.099     | -0.012    | 0.024      | 0.024 | 0.047 | 0.014 |
| -0.55 | -0.40 | 1.17            | 1.17      | 0.087     | -0.010    | 0.026      | 0.026 | 0.039 | 0.016 |
| -0.60 | -0.40 | 1.18            | 1.18      | 0.090     | -0.011    | 0.023      | 0.023 | 0.031 | 0.016 |
| -0.65 | -0.40 | 1.20            | 1.19      | 0.089     | -0.009    | 0.024      | 0.024 | 0.029 | 0.017 |
| -0.70 | -0.40 | 1.21            | 1.21      | 0.091     | -0.007    | 0.023      | 0.023 | 0.028 | 0.016 |
| -0.75 | -0.40 | 1.22            | 1.22      | 0.092     | -0.005    | 0.022      | 0.021 | 0.026 | 0.016 |
| -0.80 | -0.40 | 1.20            | 1.19      | 0.092     | 0.004     | 0.032      | 0.032 | 0.026 | 0.017 |
| -0.80 | -0.50 | 1.13            | 1.13      | 0.076     | -0.013    | 0.043      | 0.043 | 0.030 | 0.028 |
| -0.75 | -0.50 | 1.22            | 1.21      | 0.080     | -0.021    | 0.026      | 0.026 | 0.027 | 0.017 |
| -0.70 | -0.50 | 1.21            | 1.21      | 0.086     | -0.017    | 0.022      | 0.022 | 0.027 | 0.015 |
| -0.65 | -0.50 | 1.20            | 1.20      | 0.087     | -0.021    | 0.023      | 0.022 | 0.034 | 0.019 |
| -0.60 | -0.50 | 1.18            | 1.18      | 0.085     | -0.013    | 0.022      | 0.022 | 0.034 | 0.015 |
| -0.55 | -0.50 | 1.17            | 1.17      | 0.081     | -0.013    | 0.028      | 0.027 | 0.039 | 0.015 |
| -0.50 | -0.50 | 1.16            | 1.15      | 0.078     | -0.011    | 0.023      | 0.023 | 0.037 | 0.017 |
| -0.40 | -0.50 | 1.14            | 1.13      | 0.086     | -0.010    | 0.022      | 0.022 | 0.049 | 0.016 |
| -0.30 | -0.50 | 1.11            | 1.11      | 0.085     | -0.012    | 0.022      | 0.022 | 0.053 | 0.014 |
| -0.20 | -0.50 | 1.09            | 1.07      | 0.079     | -0.013    | 0.022      | 0.022 | 0.052 | 0.015 |
| -0.10 | -0.50 | 1.07            | 1.07      | 0.084     | -0.010    | 0.023      | 0.022 | 0.066 | 0.015 |
| 0.00  | -0.50 | 1.05            | 1.05      | 0.115     | -0.014    | 0.029      | 0.028 | 0.071 | 0.017 |
| 0.10  | -0.50 | 1.04            | 1.03      | 0.127     | -0.018    | 0.034      | 0.033 | 0.068 | 0.020 |
| 0.20  | -0.50 | 1.03            | 1.03      | 0.105     | -0.010    | 0.034      | 0.032 | 0.078 | 0.011 |
| 0.30  | -0.50 | 0.99            | 0.98      | 0.104     | -0.017    | 0.038      | 0.035 | 0.076 | 0.018 |
| 0.40  | -0.50 | 0.98            | 0.97      | 0.105     | -0.015    | 0.030      | 0.028 | 0.083 | 0.020 |
| 0.50  | -0.50 | 0.95            | 0.94      | 0.103     | -0.019    | 0.032      | 0.031 | 0.079 | 0.021 |
| 0.60  | -0.50 | 0.94            | 0.93      | 0.125     | -0.019    | 0.031      | 0.028 | 0.093 | 0.015 |
| 0.70  | -0.50 | 0.93            | 0.91      | 0.150     | -0.021    | 0.033      | 0.032 | 0.077 | 0.019 |
| 0.80  | -0.50 | 0.90            | 0.89      | 0.121     | -0.017    | 0.037      | 0.036 | 0.082 | 0.015 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80     | -0.60    | 0.88            | 0.87      | 0.113     | -0.019    | 0.052      | 0.053 | 0.097 | 0.031 |
| 0.70     | -0.60    | 0.92            | 0.91      | 0.140     | -0.016    | 0.028      | 0.026 | 0.077 | 0.022 |
| 0.60     | -0.60    | 0.94            | 0.93      | 0.108     | -0.012    | 0.028      | 0.027 | 0.082 | 0.018 |
| 0.50     | -0.60    | 0.95            | 0.94      | 0.099     | -0.016    | 0.024      | 0.024 | 0.078 | 0.020 |
| 0.40     | -0.60    | 0.97            | 0.96      | 0.053     | -0.011    | 0.017      | 0.016 | 0.059 | 0.013 |
| 0.30     | -0.60    | 0.99            | 0.98      | 0.056     | -0.013    | 0.023      | 0.021 | 0.060 | 0.016 |
| 0.20     | -0.60    | 1.03            | 1.02      | 0.098     | -0.011    | 0.032      | 0.030 | 0.069 | 0.012 |
| 0.10     | -0.60    | 1.03            | 1.02      | 0.091     | -0.016    | 0.025      | 0.023 | 0.072 | 0.016 |
| 0.00     | -0.60    | 1.05            | 1.04      | 0.116     | -0.016    | 0.029      | 0.029 | 0.067 | 0.017 |
| -0.10    | -0.60    | 1.07            | 1.07      | 0.074     | -0.011    | 0.024      | 0.022 | 0.062 | 0.016 |
| -0.20    | -0.60    | 1.09            | 1.09      | 0.074     | -0.008    | 0.019      | 0.019 | 0.055 | 0.015 |
| -0.30    | -0.60    | 1.12            | 1.12      | 0.068     | -0.007    | 0.017      | 0.017 | 0.039 | 0.013 |
| -0.40    | -0.60    | 1.15            | 1.14      | 0.058     | -0.008    | 0.015      | 0.015 | 0.025 | 0.015 |
| -0.50    | -0.60    | 1.17            | 1.17      | 0.056     | -0.013    | 0.017      | 0.017 | 0.023 | 0.015 |
| -0.55    | -0.60    | 1.18            | 1.18      | 0.058     | -0.010    | 0.017      | 0.017 | 0.018 | 0.014 |
| -0.60    | -0.60    | 1.20            | 1.19      | 0.061     | -0.013    | 0.016      | 0.016 | 0.019 | 0.016 |
| -0.65    | -0.60    | 1.21            | 1.21      | 0.062     | -0.019    | 0.017      | 0.017 | 0.018 | 0.015 |
| -0.70    | -0.60    | 1.22            | 1.22      | 0.065     | -0.023    | 0.021      | 0.021 | 0.019 | 0.015 |
| -0.75    | -0.60    | 1.21            | 1.21      | 0.071     | -0.030    | 0.034      | 0.034 | 0.020 | 0.018 |
| -0.80    | -0.60    | 1.12            | 1.12      | 0.067     | -0.024    | 0.055      | 0.055 | 0.029 | 0.032 |
| -0.80    | -0.70    | 1.11            | 1.11      | 0.044     | -0.006    | 0.041      | 0.041 | 0.031 | 0.030 |
| -0.75    | -0.70    | 1.19            | 1.19      | 0.054     | -0.026    | 0.045      | 0.045 | 0.022 | 0.024 |
| -0.70    | -0.70    | 1.22            | 1.22      | 0.053     | -0.022    | 0.025      | 0.025 | 0.022 | 0.016 |
| -0.65    | -0.70    | 1.20            | 1.20      | 0.054     | -0.012    | 0.021      | 0.021 | 0.027 | 0.021 |
| -0.60    | -0.70    | 1.19            | 1.17      | 0.057     | -0.014    | 0.020      | 0.020 | 0.020 | 0.016 |
| -0.55    | -0.70    | 1.18            | 1.18      | 0.062     | -0.007    | 0.019      | 0.019 | 0.025 | 0.015 |
| -0.50    | -0.70    | 1.16            | 1.16      | 0.063     | -0.009    | 0.022      | 0.022 | 0.030 | 0.017 |
| -0.40    | -0.70    | 1.14            | 1.14      | 0.066     | -0.006    | 0.017      | 0.017 | 0.032 | 0.016 |
| -0.30    | -0.70    | 1.12            | 1.11      | 0.065     | -0.009    | 0.021      | 0.021 | 0.035 | 0.015 |
| -0.20    | -0.70    | 1.09            | 1.09      | 0.065     | -0.013    | 0.020      | 0.019 | 0.039 | 0.015 |
| -0.10    | -0.70    | 1.07            | 1.06      | 0.076     | -0.013    | 0.020      | 0.018 | 0.055 | 0.015 |
| 0.00     | -0.70    | 1.04            | 1.04      | 0.062     | -0.015    | 0.020      | 0.019 | 0.045 | 0.015 |
| 0.10     | -0.70    | 1.02            | 1.02      | 0.055     | -0.013    | 0.019      | 0.018 | 0.044 | 0.014 |
| 0.20     | -0.70    | 1.01            | 1.00      | 0.063     | -0.020    | 0.031      | 0.031 | 0.060 | 0.023 |
| 0.30     | -0.70    | 0.98            | 0.97      | 0.050     | -0.013    | 0.026      | 0.026 | 0.055 | 0.017 |
| 0.40     | -0.70    | 0.96            | 0.96      | 0.031     | -0.008    | 0.019      | 0.019 | 0.034 | 0.014 |
| 0.50     | -0.70    | 0.94            | 0.94      | 0.038     | -0.005    | 0.019      | 0.019 | 0.049 | 0.015 |
| 0.60     | -0.70    | 0.93            | 0.92      | 0.104     | -0.007    | 0.024      | 0.022 | 0.073 | 0.027 |
| 0.70     | -0.70    | 0.92            | 0.91      | 0.114     | -0.009    | 0.031      | 0.030 | 0.062 | 0.026 |
| 0.80     | -0.70    | 0.89            | 0.88      | 0.069     | -0.015    | 0.045      | 0.045 | 0.071 | 0.036 |
| 0.80     | -0.80    | 0.85            | 0.84      | 0.064     | -0.014    | 0.072      | 0.071 | 0.077 | 0.047 |
| 0.70     | -0.80    | 0.90            | 0.90      | 0.079     | -0.009    | 0.042      | 0.041 | 0.080 | 0.028 |
| 0.60     | -0.80    | 0.94            | 0.93      | 0.091     | -0.002    | 0.026      | 0.025 | 0.066 | 0.026 |
| 0.50     | -0.80    | 0.95            | 0.95      | 0.031     | -0.002    | 0.020      | 0.019 | 0.038 | 0.018 |
| 0.40     | -0.80    | 0.97            | 0.97      | 0.037     | -0.008    | 0.021      | 0.021 | 0.044 | 0.019 |
| 0.30     | -0.80    | 0.98            | 0.98      | 0.043     | -0.015    | 0.023      | 0.023 | 0.044 | 0.021 |
| 0.20     | -0.80    | 1.01            | 1.01      | 0.045     | -0.017    | 0.023      | 0.023 | 0.040 | 0.032 |
| 0.10     | -0.80    | 1.03            | 1.02      | 0.074     | -0.025    | 0.030      | 0.029 | 0.061 | 0.025 |
| 0.00     | -0.80    | 1.05            | 1.04      | 0.088     | -0.025    | 0.028      | 0.028 | 0.057 | 0.023 |
| -0.10    | -0.80    | 1.07            | 1.07      | 0.089     | -0.019    | 0.030      | 0.030 | 0.056 | 0.022 |
| -0.20    | -0.80    | 1.10            | 1.09      | 0.089     | -0.015    | 0.032      | 0.031 | 0.050 | 0.022 |
| -0.30    | -0.80    | 1.12            | 1.11      | 0.084     | -0.012    | 0.030      | 0.030 | 0.047 | 0.024 |
| -0.40    | -0.80    | 1.14            | 1.14      | 0.093     | -0.006    | 0.030      | 0.030 | 0.043 | 0.024 |
| -0.50    | -0.80    | 1.17            | 1.16      | 0.066     | -0.001    | 0.026      | 0.026 | 0.034 | 0.024 |
| -0.55    | -0.80    | 1.18            | 1.18      | 0.065     | 0.000     | 0.023      | 0.023 | 0.033 | 0.024 |
| -0.60    | -0.80    | 1.19            | 1.19      | 0.054     | 0.000     | 0.022      | 0.022 | 0.027 | 0.019 |
| -0.65    | -0.80    | 1.21            | 1.21      | 0.046     | -0.003    | 0.023      | 0.023 | 0.027 | 0.020 |
| -0.70    | -0.80    | 1.21            | 1.21      | 0.043     | -0.012    | 0.029      | 0.029 | 0.030 | 0.020 |
| -0.75    | -0.80    | 1.17            | 1.17      | 0.039     | -0.017    | 0.046      | 0.046 | 0.032 | 0.026 |
| -0.80    | -0.80    | 1.14            | 1.14      | 0.020     | 0.007     | 0.039      | 0.040 | 0.037 | 0.028 |

| $y$   | $z$   | $U_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.85 | 1.15      | 1.15      | 0.007     | 0.008     | 0.057      | 0.057 | 0.037 | 0.035 |
| -0.75 | -0.85 | 1.18      | 1.18      | 0.022     | -0.012    | 0.044      | 0.043 | 0.064 | 0.033 |
| -0.70 | -0.85 | 1.18      | 1.18      | 0.029     | -0.009    | 0.050      | 0.050 | 0.039 | 0.040 |
| -0.65 | -0.85 | 1.16      | 1.16      | 0.045     | -0.007    | 0.068      | 0.069 | 0.051 | 0.033 |
| -0.60 | -0.85 | 1.15      | 1.14      | 0.057     | -0.003    | 0.060      | 0.058 | 0.064 | 0.045 |
| -0.55 | -0.85 | 1.15      | 1.15      | 0.067     | -0.008    | 0.037      | 0.038 | 0.039 | 0.033 |
| -0.50 | -0.85 | 1.12      | 1.12      | 0.063     | -0.013    | 0.064      | 0.064 | 0.040 | 0.038 |
| -0.40 | -0.85 | 1.09      | 1.09      | 0.067     | -0.013    | 0.059      | 0.059 | 0.059 | 0.046 |
| -0.30 | -0.85 | 1.06      | 1.05      | 0.060     | -0.025    | 0.071      | 0.072 | 0.058 | 0.042 |
| -0.20 | -0.85 | 1.05      | 1.05      | 0.063     | -0.015    | 0.058      | 0.058 | 0.061 | 0.050 |
| -0.10 | -0.85 | 1.04      | 1.04      | 0.061     | -0.032    | 0.042      | 0.041 | 0.046 | 0.044 |
| 0.00  | -0.85 | 1.03      | 1.02      | 0.054     | -0.031    | 0.051      | 0.044 | 0.031 | 0.131 |
| 0.10  | -0.85 | 1.01      | 1.01      | 0.045     | -0.026    | 0.035      | 0.034 | 0.031 | 0.029 |
| 0.20  | -0.85 | 1.00      | 1.00      | 0.042     | -0.020    | 0.033      | 0.024 | 0.033 | 0.151 |
| 0.30  | -0.85 | 0.97      | 0.97      | 0.034     | -0.017    | 0.020      | 0.020 | 0.035 | 0.027 |
| 0.40  | -0.85 | 0.96      | 0.96      | 0.035     | -0.011    | 0.023      | 0.024 | 0.035 | 0.024 |
| 0.50  | -0.85 | 0.94      | 0.94      | 0.027     | -0.005    | 0.025      | 0.024 | 0.045 | 0.024 |
| 0.60  | -0.85 | 0.92      | 0.92      | 0.031     | -0.008    | 0.028      | 0.027 | 0.046 | 0.032 |
| 0.70  | -0.85 | 0.89      | 0.88      | 0.044     | -0.001    | 0.050      | 0.049 | 0.076 | 0.033 |
| 0.80  | -0.85 | 0.85      | 0.84      | 0.036     | -0.024    | 0.063      | 0.063 | 0.044 | 0.043 |
| -0.80 | -0.90 | 1.04      | 1.03      | -0.111    | 0.015     | 0.102      | 0.101 | 0.099 | 0.049 |
| -0.75 | -0.90 | 1.04      | 1.03      | -0.098    | 0.010     | 0.073      | 0.073 | 0.088 | 0.059 |
| -0.70 | -0.90 | 1.02      | 1.01      | -0.080    | -0.004    | 0.092      | 0.073 | 0.071 | 0.055 |
| -0.65 | -0.90 | 1.04      | 1.03      | -0.072    | -0.006    | 0.090      | 0.090 | 0.063 | 0.054 |
| -0.60 | -0.90 | 1.03      | 1.03      | -0.050    | -0.004    | 0.087      | 0.087 | 0.087 | 0.054 |
| -0.55 | -0.90 | 1.00      | 0.99      | -0.059    | -0.004    | 0.089      | 0.090 | 0.101 | 0.053 |
| -0.50 | -0.90 | 1.01      | 1.00      | -0.074    | -0.018    | 0.092      | 0.093 | 0.102 | 0.053 |
| 0.40  | -0.70 | 0.98      | 0.98      | -0.032    | -0.010    | 0.081      | 0.082 | 0.105 | 0.057 |
| 0.50  | -0.90 | 0.97      | 0.95      | -0.036    | -0.009    | 0.086      | 0.088 | 0.100 | 0.049 |
| 0.70  | -0.50 | 0.98      | 0.97      | -0.009    | -0.017    | 0.079      | 0.079 | 0.091 | 0.050 |
| 0.10  | -0.70 | 0.95      | 0.94      | -0.010    | -0.022    | 0.068      | 0.068 | 0.100 | 0.051 |
| 0.00  | -0.90 | 0.94      | 0.94      | -0.003    | -0.012    | 0.069      | 0.067 | 0.050 | 0.046 |
| 0.10  | -0.70 | 0.96      | 0.96      | 0.024     | -0.024    | 0.050      | 0.050 | 0.076 | 0.038 |
| 0.20  | -0.50 | 0.96      | 0.96      | 0.006     | -0.007    | 0.051      | 0.052 | 0.068 | 0.050 |
| 0.30  | -0.70 | 0.95      | 0.94      | 0.037     | -0.018    | 0.049      | 0.040 | 0.062 | 0.017 |
| 0.40  | -0.90 | 0.94      | 0.93      | 0.034     | -0.014    | 0.046      | 0.046 | 0.057 | 0.040 |
| 0.50  | -0.90 | 0.97      | 0.91      | 0.057     | -0.011    | 0.050      | 0.051 | 0.066 | 0.030 |
| 0.60  | -0.90 | 0.89      | 0.88      | 0.097     | -0.015    | 0.059      | 0.059 | 0.059 | 0.036 |
| 0.70  | -0.90 | 0.86      | 0.85      | 0.087     | -0.014    | 0.064      | 0.062 | 0.074 | 0.044 |
| 0.80  | -0.90 | 0.81      | 0.80      | 0.071     | -0.014    | 0.061      | 0.063 | 0.067 | 0.041 |
| -0.80 | -0.93 | 0.99      | 0.97      | -0.153    | 0.013     | 0.097      | 0.095 | 0.090 | 0.071 |
| -0.75 | -0.93 | 1.01      | 0.97      | -0.107    | -0.006    | 0.090      | 0.090 | 0.097 | 0.040 |
| -0.70 | -0.93 | 0.99      | 0.97      | -0.153    | -0.006    | 0.098      | 0.079 | 0.100 | 0.050 |
| -0.65 | -0.93 | 0.96      | 0.94      | -0.130    | 0.000     | 0.091      | 0.072 | 0.101 | 0.055 |
| -0.60 | -0.93 | 0.95      | 0.93      | -0.117    | 0.012     | 0.065      | 0.087 | 0.079 | 0.052 |
| -0.55 | -0.93 | 0.94      | 0.94      | -0.116    | -0.007    | 0.101      | 0.102 | 0.101 | 0.051 |
| -0.50 | -0.93 | 0.95      | 0.93      | -0.116    | -0.005    | 0.093      | 0.095 | 0.106 | 0.052 |
| -0.40 | -0.93 | 0.92      | 0.92      | -0.111    | -0.008    | 0.084      | 0.083 | 0.114 | 0.05  |
| -0.30 | -0.93 | 0.93      | 0.92      | -0.114    | 0.010     | 0.075      | 0.075 | 0.073 | 0.049 |
| -0.20 | -0.93 | 0.94      | 0.93      | -0.105    | -0.012    | 0.074      | 0.073 | 0.101 | 0.047 |
| -0.10 | -0.93 | 0.93      | 0.92      | -0.037    | -0.011    | 0.078      | 0.077 | 0.095 | 0.051 |
| 0.00  | -0.73 | 0.91      | 0.91      | -0.087    | -0.015    | 0.065      | 0.071 | 0.087 | 0.040 |
| 0.10  | -0.73 | 0.93      | 0.92      | -0.087    | -0.014    | 0.076      | 0.028 | 0.065 | 0.014 |
| 0.20  | -0.73 | 0.93      | 0.93      | -0.077    | 0.000     | 0.062      | 0.062 | 0.071 | 0.048 |
| 0.30  | -0.73 | 0.91      | 0.91      | -0.022    | -0.012    | 0.061      | 0.061 | 0.071 | 0.044 |
| 0.40  | -0.73 | 0.91      | 0.70      | 0.001     | 0.005     | 0.065      | 0.065 | 0.061 | 0.041 |
| 0.50  | -0.73 | 0.91      | 0.93      | 0.050     | 0.007     | 0.101      | 0.067 | 0.107 | 0.045 |
| 0.55  | -0.73 | 0.89      | 0.89      | 0.061     | 0.006     | 0.054      | 0.055 | 0.037 | 0.044 |
| 0.60  | -0.73 | 0.86      | 0.85      | 0.053     | -0.007    | 0.067      | 0.067 | 0.051 | 0.036 |
| 0.65  | -0.73 | 0.86      | 0.86      | 0.084     | -0.016    | 0.068      | 0.066 | 0.085 | 0.044 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U' rms</u> | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| -0.70    | -0.93    | 0.85        | 0.02     | 0.034    | -0.002   | 0.071         | 0.073     | 0.075     | 0.044     |
| 0.80     | -0.93    | 0.81        | 0.80     | 0.070    | -0.019   | 0.065         | 0.063     | 0.068     | 0.041     |
| -0.80    | -0.75    | 0.73        | 0.37     | -0.222   | 0.017    | 0.086         | 0.086     | 0.099     | 0.047     |
| -0.75    | -0.95    | 0.87        | 0.08     | -0.074   | -0.017   | 0.083         | 0.083     | 0.125     | 0.046     |
| -0.70    | -0.75    | 0.50        | 0.09     | -0.001   | -0.012   | 0.060         | 0.060     | 0.046     | 0.055     |
| -0.65    | -0.95    | 0.91        | 0.83     | -0.202   | 0.005    | 0.080         | 0.078     | 0.106     | 0.063     |
| -0.60    | -0.75    | 0.94        | 0.90     | -0.216   | 0.006    | 0.089         | 0.088     | 0.095     | 0.049     |
| -0.55    | -0.75    | 0.70        | 0.87     | -0.178   | 0.002    | 0.084         | 0.076     | 0.155     | 0.048     |
| -0.50    | -0.75    | 0.71        | 0.87     | -0.176   | 0.007    | 0.081         | 0.082     | 0.120     | 0.057     |
| -0.40    | -0.95    | 0.93        | 0.90     | -0.183   | -0.005   | 0.076         | 0.074     | 0.105     | 0.057     |
| -0.30    | -0.75    | 0.75        | 0.90     | -0.206   | 0.002    | 0.074         | 0.074     | 0.089     | 0.038     |
| -0.20    | -0.95    | 0.90        | 0.89     | -0.131   | -0.004   | 0.080         | 0.077     | 0.080     | 0.048     |
| -0.10    | -0.95    | 0.90        | 0.88     | -0.157   | -0.002   | 0.079         | 0.080     | 0.095     | 0.037     |
| 0.00     | -0.95    | 0.86        | 0.85     | -0.116   | -0.017   | 0.080         | 0.082     | 0.082     | 0.047     |
| 0.10     | -0.75    | 0.79        | 0.77     | -0.069   | -0.007   | 0.072         | 0.072     | 0.081     | 0.037     |
| 0.20     | -0.75    | 0.91        | 0.71     | -0.022   | -0.025   | 0.103         | 0.104     | 0.070     | 0.045     |
| 0.30     | -0.75    | 0.91        | 0.91     | -0.001   | -0.021   | 0.108         | 0.108     | 0.071     | 0.038     |
| 0.40     | -0.95    | 0.86        | 0.86     | 0.003    | -0.021   | 0.114         | 0.114     | 0.063     | 0.035     |
| 0.50     | -0.75    | 0.86        | 0.85     | 0.076    | -0.017   | 0.104         | 0.104     | 0.040     | 0.037     |
| 0.60     | -0.95    | 0.83        | 0.83     | 0.097    | -0.021   | 0.059         | 0.099     | 0.044     | 0.037     |
| 0.70     | -0.95    | 0.79        | 0.78     | 0.069    | -0.015   | 0.078         | 0.079     | 0.074     | 0.036     |
| 0.80     | -0.95    | 0.75        | 0.75     | 0.074    | -0.016   | 0.063         | 0.065     | 0.065     | 0.030     |
| 0.70     | 0.00     | 0.72        | 0.71     | 0.055    | 0.004    | 0.025         | 0.025     | 0.061     | 0.020     |
| 0.60     | 0.00     | 0.93        | 0.97     | 0.087    | -0.001   | 0.027         | 0.026     | 0.065     | 0.020     |
| 0.50     | 0.00     | 0.95        | 0.94     | 0.102    | -0.006   | 0.028         | 0.028     | 0.067     | 0.022     |
| 0.40     | 0.00     | 0.98        | 0.97     | 0.121    | -0.006   | 0.030         | 0.030     | 0.065     | 0.020     |
| 0.30     | 0.00     | 0.99        | 0.99     | 0.090    | -0.005   | 0.030         | 0.029     | 0.059     | 0.020     |
| 0.20     | 0.00     | 1.04        | 1.02     | 0.117    | 0.074    | 0.040         | 0.030     | 0.061     | 0.143     |
| 0.10     | 0.00     | 1.03        | 1.01     | 0.115    | -0.004   | 0.034         | 0.034     | 0.056     | 0.020     |
| 0.00     | 0.00     | 1.05        | 1.04     | 0.118    | -0.006   | 0.032         | 0.033     | 0.057     | 0.020     |
| 0.10     | 0.00     | 1.07        | 1.06     | 0.119    | -0.007   | 0.034         | 0.034     | 0.050     | 0.022     |
| -0.20    | 0.00     | 1.09        | 1.08     | 0.117    | -0.009   | 0.034         | 0.034     | 0.047     | 0.020     |
| -0.30    | 0.00     | 1.11        | 1.10     | 0.117    | -0.008   | 0.034         | 0.033     | 0.047     | 0.019     |
| -0.40    | 0.00     | 1.13        | 1.13     | 0.115    | -0.010   | 0.032         | 0.032     | 0.039     | 0.022     |
| -0.50    | 0.00     | 1.15        | 1.15     | 0.111    | -0.007   | 0.028         | 0.028     | 0.038     | 0.019     |
| -0.55    | 0.00     | 1.16        | 1.16     | 0.102    | -0.010   | 0.032         | 0.032     | 0.034     | 0.019     |
| -0.60    | 0.00     | 1.17        | 1.17     | 0.097    | -0.009   | 0.027         | 0.027     | 0.031     | 0.020     |
| -0.65    | 0.00     | 1.17        | 1.19     | 0.090    | -0.007   | 0.030         | 0.030     | 0.029     | 0.020     |
| -0.70    | 0.00     | 1.20        | 1.20     | 0.088    | -0.002   | 0.029         | 0.029     | 0.026     | 0.019     |
| -0.75    | 0.00     | 1.22        | 1.21     | 0.083    | -0.006   | 0.018         | 0.028     | 0.022     | 0.011     |
| -0.80    | 0.00     | 1.22        | 1.22     | 0.072    | -0.002   | 0.031         | 0.031     | 0.022     | 0.017     |
| -0.80    | 0.10     | 1.22        | 1.22     | 0.076    | -0.006   | 0.032         | 0.032     | 0.020     | 0.018     |
| -0.75    | 0.10     | 1.21        | 1.21     | 0.078    | -0.002   | 0.029         | 0.029     | 0.026     | 0.016     |
| -0.70    | 0.10     | 1.20        | 1.20     | 0.087    | -0.003   | 0.029         | 0.029     | 0.025     | 0.017     |
| -0.65    | 0.10     | 1.19        | 1.18     | 0.092    | -0.006   | 0.027         | 0.028     | 0.027     | 0.018     |
| -0.60    | 0.10     | 1.17        | 1.17     | 0.096    | -0.004   | 0.030         | 0.030     | 0.035     | 0.017     |
| -0.55    | 0.10     | 1.16        | 1.16     | 0.101    | -0.008   | 0.030         | 0.030     | 0.037     | 0.020     |
| -0.50    | 0.10     | 1.16        | 1.15     | 0.107    | -0.010   | 0.031         | 0.031     | 0.038     | 0.021     |
| -0.40    | 0.10     | 1.13        | 1.13     | 0.109    | -0.005   | 0.031         | 0.031     | 0.041     | 0.020     |
| -0.30    | 0.10     | 1.11        | 1.10     | 0.103    | -0.003   | 0.029         | 0.029     | 0.046     | 0.020     |
| -0.20    | 0.10     | 1.09        | 1.08     | 0.111    | -0.006   | 0.037         | 0.032     | 0.052     | 0.020     |
| -0.10    | 0.10     | 1.07        | 1.06     | 0.108    | -0.001   | 0.033         | 0.032     | 0.055     | 0.020     |
| 0.00     | 0.10     | 1.05        | 1.04     | 0.109    | -0.001   | 0.031         | 0.031     | 0.059     | 0.020     |
| 0.10     | 0.10     | 1.03        | 1.02     | 0.107    | 0.002    | 0.030         | 0.029     | 0.066     | 0.020     |
| 0.20     | 0.10     | 1.01        | 1.00     | 0.082    | 0.004    | 0.027         | 0.025     | 0.066     | 0.018     |
| 0.30     | 0.10     | 0.98        | 0.97     | 0.098    | -0.005   | 0.030         | 0.030     | 0.059     | 0.019     |
| 0.40     | 0.10     | 0.97        | 0.96     | 0.087    | 0.002    | 0.026         | 0.026     | 0.071     | 0.017     |
| 0.50     | 0.10     | 0.95        | 0.74     | 0.086    | 0.000    | 0.031         | 0.031     | 0.063     | 0.018     |
| 0.60     | 0.10     | 0.93        | 0.72     | 0.088    | 0.001    | 0.027         | 0.026     | 0.067     | 0.019     |
| 0.70     | 0.10     | 0.77        | 0.71     | 0.062    | 0.005    | 0.025         | 0.025     | 0.067     | 0.022     |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | 0.10 | 0.88            | 0.87      | 0.064     | 0.010     | 0.043      | 0.043 | 0.054 | 0.173 |
| -0.60 | 0.20 | 0.88            | 0.87      | 0.086     | 0.010     | 0.038      | 0.039 | 0.059 | 0.031 |
| 0.70  | 0.20 | 0.71            | 0.91      | 0.065     | 0.006     | 0.029      | 0.029 | 0.046 | 0.021 |
| 0.60  | 0.20 | 0.73            | 0.97      | 0.088     | 0.002     | 0.028      | 0.029 | 0.047 | 0.015 |
| 0.50  | 0.20 | 0.75            | 0.94      | 0.092     | 0.002     | 0.030      | 0.030 | 0.048 | 0.020 |
| 0.40  | 0.20 | 0.77            | 0.96      | 0.107     | 0.004     | 0.031      | 0.031 | 0.052 | 0.017 |
| 0.30  | 0.20 | 0.78            | 0.97      | 0.105     | 0.003     | 0.027      | 0.026 | 0.055 | 0.017 |
| 0.20  | 0.20 | 1.07            | 1.01      | 0.100     | 0.002     | 0.043      | 0.028 | 0.058 | 0.154 |
| 0.10  | 0.20 | 1.03            | 1.02      | 0.127     | 0.000     | 0.031      | 0.030 | 0.054 | 0.071 |
| 0.00  | 0.20 | 1.05            | 1.04      | 0.173     | 0.000     | 0.030      | 0.031 | 0.056 | 0.020 |
| -0.10 | 0.20 | 1.06            | 1.06      | 0.117     | 0.002     | 0.030      | 0.030 | 0.048 | 0.019 |
| -0.20 | 0.20 | 1.09            | 1.08      | 0.127     | -0.001    | 0.032      | 0.032 | 0.047 | 0.020 |
| -0.30 | 0.20 | 1.11            | 1.10      | 0.123     | -0.001    | 0.033      | 0.033 | 0.044 | 0.020 |
| -0.40 | 0.20 | 1.13            | 1.11      | 0.123     | -0.002    | 0.029      | 0.030 | 0.042 | 0.020 |
| -0.50 | 0.20 | 1.15            | 1.15      | 0.117     | 0.000     | 0.031      | 0.031 | 0.038 | 0.018 |
| -0.55 | 0.20 | 1.17            | 1.16      | 0.111     | -0.001    | 0.028      | 0.029 | 0.030 | 0.017 |
| -0.60 | 0.20 | 1.18            | 1.18      | 0.108     | -0.002    | 0.028      | 0.028 | 0.030 | 0.020 |
| -0.65 | 0.20 | 1.19            | 1.19      | 0.106     | -0.002    | 0.029      | 0.027 | 0.030 | 0.020 |
| -0.70 | 0.20 | 1.20            | 1.20      | 0.102     | -0.003    | 0.028      | 0.028 | 0.025 | 0.017 |
| -0.75 | 0.20 | 1.22            | 1.22      | 0.101     | -0.004    | 0.025      | 0.025 | 0.074 | 0.016 |
| -0.80 | 0.20 | 1.22            | 1.22      | 0.097     | -0.010    | 0.025      | 0.035 | 0.022 | 0.015 |
| -0.80 | 0.30 | 1.10            | 1.19      | 0.110     | -0.009    | 0.039      | 0.039 | 0.024 | 0.019 |
| -0.75 | 0.30 | 1.21            | 1.21      | 0.111     | 0.000     | 0.029      | 0.029 | 0.021 | 0.017 |
| -0.70 | 0.30 | 1.20            | 1.20      | 0.110     | 0.004     | 0.031      | 0.031 | 0.027 | 0.015 |
| -0.65 | 0.30 | 1.19            | 1.19      | 0.106     | 0.003     | 0.027      | 0.029 | 0.030 | 0.019 |
| -0.60 | 0.30 | 1.18            | 1.17      | 0.110     | 0.004     | 0.030      | 0.030 | 0.030 | 0.017 |
| -0.55 | 0.30 | 1.17            | 1.16      | 0.110     | 0.004     | 0.031      | 0.031 | 0.034 | 0.018 |
| -0.50 | 0.30 | 1.15            | 1.15      | 0.113     | 0.003     | 0.029      | 0.029 | 0.077 | 0.019 |
| -0.40 | 0.30 | 1.13            | 1.13      | 0.106     | 0.003     | 0.015      | 0.025 | 0.044 | 0.018 |
| -0.30 | 0.30 | 1.11            | 1.10      | 0.109     | 0.006     | 0.020      | 0.018 | 0.052 | 0.017 |
| -0.20 | 0.30 | 1.08            | 1.06      | 0.119     | 0.008     | 0.029      | 0.028 | 0.055 | 0.018 |
| -0.10 | 0.30 | 1.06            | 1.06      | 0.104     | 0.007     | 0.026      | 0.025 | 0.060 | 0.019 |
| 0.00  | 0.30 | 1.05            | 1.04      | 0.103     | 0.010     | 0.027      | 0.027 | 0.065 | 0.018 |
| 0.10  | 0.30 | 1.02            | 1.02      | 0.076     | 0.015     | 0.027      | 0.027 | 0.052 | 0.017 |
| 0.20  | 0.30 | 1.01            | 1.00      | 0.076     | 0.047     | 0.033      | 0.026 | 0.062 | 0.012 |
| 0.30  | 0.20 | 0.98            | 0.99      | 0.061     | 0.017     | 0.022      | 0.021 | 0.055 | 0.015 |
| 0.40  | 0.30 | 0.97            | 0.98      | 0.053     | 0.017     | 0.017      | 0.017 | 0.054 | 0.016 |
| 0.50  | 0.30 | 0.95            | 0.94      | 0.047     | 0.017     | 0.010      | 0.018 | 0.042 | 0.015 |
| 0.60  | 0.30 | 0.93            | 0.93      | 0.044     | 0.016     | 0.020      | 0.019 | 0.050 | 0.012 |
| 0.70  | 0.30 | 0.92            | 0.91      | 0.037     | 0.020     | 0.021      | 0.021 | 0.028 | 0.016 |
| 0.80  | 0.30 | 0.93            | 0.93      | 0.031     | 0.021     | 0.036      | 0.036 | 0.040 | 0.017 |
| 0.80  | 0.40 | 0.87            | 0.87      | 0.037     | 0.008     | 0.027      | 0.037 | 0.041 | 0.029 |
| 0.70  | 0.40 | 0.71            | 0.71      | 0.043     | 0.013     | 0.026      | 0.026 | 0.042 | 0.021 |
| 0.60  | 0.40 | 0.93            | 0.92      | 0.054     | 0.016     | 0.027      | 0.028 | 0.048 | 0.017 |
| 0.50  | 0.40 | 0.74            | 0.74      | 0.052     | 0.018     | 0.022      | 0.022 | 0.047 | 0.015 |
| 0.40  | 0.40 | 0.96            | 0.96      | 0.049     | 0.020     | 0.018      | 0.018 | 0.043 | 0.013 |
| 0.30  | 0.40 | 0.98            | 0.98      | 0.061     | 0.020     | 0.020      | 0.020 | 0.046 | 0.016 |
| 0.20  | 0.40 | 1.01            | 1.00      | 0.076     | 0.015     | 0.030      | 0.030 | 0.057 | 0.017 |
| 0.10  | 0.40 | 1.02            | 1.01      | 0.071     | 0.017     | 0.026      | 0.026 | 0.045 | 0.017 |
| 0.00  | 0.40 | 1.04            | 1.04      | 0.086     | 0.016     | 0.025      | 0.025 | 0.050 | 0.018 |
| -0.10 | 0.40 | 1.06            | 1.06      | 0.098     | 0.012     | 0.025      | 0.024 | 0.055 | 0.019 |
| -0.20 | 0.40 | 1.07            | 1.08      | 0.101     | 0.014     | 0.027      | 0.026 | 0.052 | 0.017 |
| -0.30 | 0.40 | 1.11            | 1.11      | 0.105     | 0.014     | 0.025      | 0.024 | 0.050 | 0.017 |
| -0.40 | 0.40 | 1.14            | 1.17      | 0.106     | 0.007     | 0.026      | 0.076 | 0.044 | 0.019 |
| -0.50 | 0.40 | 1.16            | 1.15      | 0.102     | 0.009     | 0.025      | 0.025 | 0.037 | 0.017 |
| -0.55 | 0.40 | 1.17            | 1.17      | 0.106     | 0.012     | 0.026      | 0.026 | 0.030 | 0.015 |
| -0.60 | 0.40 | 1.18            | 1.18      | 0.099     | 0.017     | 0.025      | 0.025 | 0.032 | 0.017 |
| -0.65 | 0.40 | 1.19            | 1.19      | 0.106     | 0.015     | 0.027      | 0.027 | 0.027 | 0.017 |
| -0.70 | 0.40 | 1.21            | 1.21      | 0.112     | 0.015     | 0.021      | 0.021 | 0.026 | 0.018 |
| -0.75 | 0.40 | 1.21            | 1.21      | 0.119     | 0.017     | 0.041      | 0.041 | 0.024 | 0.015 |

ORIGINAL PAGE IS  
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| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.80 | 0.40 | 1.15            | 1.14      | 0.119     | 0.004     | 0.050            | 0.050 | 0.028 | 0.027 |
| -0.80 | 0.50 | 1.06            | 1.05      | 0.099     | 0.013     | 0.066            | 0.067 | 0.040 | 0.043 |
| -0.75 | 0.50 | 1.18            | 1.17      | 0.107     | 0.029     | 0.047            | 0.047 | 0.027 | 0.023 |
| -0.70 | 0.50 | 1.22            | 1.22      | 0.097     | 0.030     | 0.030            | 0.030 | 0.025 | 0.017 |
| -0.65 | 0.50 | 1.21            | 1.20      | 0.100     | 0.025     | 0.025            | 0.025 | 0.028 | 0.017 |
| -0.60 | 0.50 | 1.19            | 1.19      | 0.099     | 0.024     | 0.028            | 0.029 | 0.032 | 0.016 |
| -0.55 | 0.50 | 1.17            | 1.17      | 0.100     | 0.018     | 0.030            | 0.030 | 0.035 | 0.017 |
| -0.50 | 0.50 | 1.16            | 1.16      | 0.101     | 0.015     | 0.029            | 0.029 | 0.035 | 0.018 |
| -0.40 | 0.50 | 1.14            | 1.13      | 0.110     | 0.013     | 0.029            | 0.029 | 0.044 | 0.015 |
| -0.30 | 0.50 | 1.11            | 1.11      | 0.102     | 0.013     | 0.026            | 0.025 | 0.045 | 0.018 |
| -0.20 | 0.50 | 1.10            | 1.09      | 0.097     | 0.010     | 0.024            | 0.024 | 0.054 | 0.017 |
| 0.10  | 0.50 | 1.07            | 1.06      | 0.106     | 0.011     | 0.025            | 0.025 | 0.057 | 0.018 |
| 0.00  | 0.50 | 1.05            | 1.04      | 0.087     | 0.023     | 0.025            | 0.025 | 0.057 | 0.016 |
| 0.10  | 0.50 | 1.02            | 1.02      | 0.084     | 0.023     | 0.025            | 0.024 | 0.054 | 0.014 |
| 0.20  | 0.50 | 1.01            | 1.01      | 0.077     | 0.016     | 0.029            | 0.028 | 0.055 | 0.017 |
| 0.30  | 0.50 | 0.99            | 0.98      | 0.064     | 0.017     | 0.028            | 0.028 | 0.054 | 0.016 |
| 0.40  | 0.50 | 0.97            | 0.97      | 0.045     | 0.017     | 0.023            | 0.024 | 0.042 | 0.016 |
| 0.50  | 0.50 | 0.94            | 0.94      | 0.046     | 0.009     | 0.032            | 0.032 | 0.041 | 0.019 |
| 0.60  | 0.50 | 0.92            | 0.92      | 0.054     | 0.000     | 0.033            | 0.033 | 0.044 | 0.021 |
| 0.70  | 0.50 | 0.88            | 0.88      | 0.034     | 0.002     | 0.037            | 0.037 | 0.042 | 0.020 |
| 0.80  | 0.50 | 0.85            | 0.85      | 0.025     | 0.013     | 0.031            | 0.031 | 0.038 | 0.017 |
| 0.80  | 0.60 | 0.85            | 0.85      | 0.030     | 0.010     | 0.034            | 0.034 | 0.045 | 0.024 |
| 0.70  | 0.50 | 0.68            | 0.67      | 0.040     | 0.013     | 0.026            | 0.026 | 0.043 | 0.015 |
| 0.60  | 0.60 | 0.89            | 0.89      | 0.040     | 0.005     | 0.032            | 0.031 | 0.046 | 0.020 |
| 0.50  | 0.60 | 0.71            | 0.70      | 0.057     | 0.006     | 0.019            | 0.019 | 0.046 | 0.018 |
| 0.40  | 0.60 | 0.74            | 0.73      | 0.051     | 0.017     | 0.030            | 0.030 | 0.043 | 0.016 |
| 0.30  | 0.60 | 0.97            | 0.96      | 0.059     | 0.014     | 0.033            | 0.033 | 0.052 | 0.018 |
| 0.20  | 0.60 | 1.00            | 1.00      | 0.065     | 0.023     | 0.029            | 0.028 | 0.050 | 0.015 |
| 0.10  | 0.60 | 1.02            | 1.02      | 0.070     | 0.019     | 0.020            | 0.020 | 0.050 | 0.018 |
| 0.00  | 0.60 | 1.05            | 1.04      | 0.085     | 0.026     | 0.024            | 0.027 | 0.055 | 0.010 |
| -0.10 | 0.60 | 1.07            | 1.07      | 0.073     | 0.019     | 0.022            | 0.022 | 0.023 | 0.017 |
| -0.20 | 0.60 | 1.10            | 1.10      | 0.067     | 0.018     | 0.021            | 0.021 | 0.038 | 0.015 |
| -0.30 | 0.60 | 1.12            | 1.12      | 0.066     | 0.022     | 0.017            | 0.019 | 0.030 | 0.016 |
| -0.40 | 0.60 | 1.15            | 1.14      | 0.063     | 0.023     | 0.017            | 0.017 | 0.023 | 0.015 |
| -0.50 | 0.60 | 1.17            | 1.17      | 0.065     | 0.027     | 0.019            | 0.019 | 0.024 | 0.015 |
| -0.55 | 0.60 | 1.18            | 1.18      | 0.065     | 0.025     | 0.013            | 0.018 | 0.021 | 0.015 |
| -0.60 | 0.60 | 1.20            | 1.20      | 0.073     | 0.042     | 0.017            | 0.017 | 0.019 | 0.015 |
| -0.65 | 0.60 | 1.22            | 1.21      | 0.077     | 0.047     | 0.018            | 0.018 | 0.018 | 0.018 |
| -0.70 | 0.60 | 1.22            | 1.22      | 0.081     | 0.048     | 0.027            | 0.027 | 0.020 | 0.019 |
| -0.75 | 0.60 | 1.16            | 1.15      | 0.074     | 0.037     | 0.041            | 0.041 | 0.027 | 0.027 |
| -0.80 | 0.60 | 1.04            | 1.04      | 0.061     | 0.006     | 0.057            | 0.057 | 0.034 | 0.041 |
| -0.80 | 0.70 | 1.08            | 1.08      | 0.045     | -0.005    | 0.042            | 0.042 | 0.035 | 0.031 |
| -0.75 | 0.70 | 1.15            | 1.14      | 0.058     | 0.024     | 0.035            | 0.035 | 0.029 | 0.032 |
| -0.70 | 0.70 | 1.19            | 1.19      | 0.067     | 0.044     | 0.035            | 0.035 | 0.026 | 0.025 |
| -0.65 | 0.70 | 1.21            | 1.21      | 0.070     | 0.043     | 0.020            | 0.020 | 0.025 | 0.019 |
| -0.60 | 0.70 | 1.20            | 1.19      | 0.069     | 0.030     | 0.019            | 0.019 | 0.025 | 0.016 |
| -0.55 | 0.70 | 1.19            | 1.19      | 0.064     | 0.026     | 0.019            | 0.017 | 0.024 | 0.016 |
| -0.50 | 0.70 | 1.17            | 1.17      | 0.074     | 0.028     | 0.020            | 0.020 | 0.020 | 0.016 |
| -0.40 | 0.70 | 1.15            | 1.14      | 0.080     | 0.019     | 0.020            | 0.019 | 0.033 | 0.017 |
| 0.30  | 0.70 | 1.12            | 1.12      | 0.085     | 0.073     | 0.019            | 0.019 | 0.045 | 0.016 |
| -0.20 | 0.70 | 1.07            | 1.07      | 0.073     | 0.019     | 0.021            | 0.020 | 0.043 | 0.017 |
| -0.10 | 0.70 | 1.05            | 1.05      | 0.053     | 0.018     | 0.028            | 0.028 | 0.045 | 0.020 |
| 0.00  | 0.70 | 1.00            | 1.00      | 0.060     | 0.023     | 0.036            | 0.036 | 0.046 | 0.019 |
| 0.10  | 0.70 | 0.97            | 0.97      | 0.055     | 0.030     | 0.025            | 0.026 | 0.042 | 0.017 |
| 0.20  | 0.70 | 0.95            | 0.95      | 0.040     | 0.034     | 0.028            | 0.027 | 0.037 | 0.013 |
| 0.30  | 0.70 | 0.94            | 0.94      | 0.046     | 0.023     | 0.028            | 0.028 | 0.042 | 0.017 |
| 0.40  | 0.70 | 0.93            | 0.92      | 0.056     | 0.017     | 0.026            | 0.026 | 0.045 | 0.017 |
| 0.50  | 0.70 | 0.91            | 0.91      | 0.061     | 0.010     | 0.027            | 0.027 | 0.039 | 0.010 |
| 0.60  | 0.70 | 0.89            | 0.89      | 0.036     | 0.016     | 0.015            | 0.025 | 0.035 | 0.016 |
| 0.70  | 0.70 | 0.87            | 0.87      | 0.024     | 0.023     | 0.020            | 0.020 | 0.026 | 0.015 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.80  | 0.70  | 0.85            | 0.85      | 0.029     | 0.025     | 0.023      | 0.023 | 0.040 | 0.024 |
| 0.80  | 0.80  | 0.84            | 0.84      | 0.023     | 0.027     | 0.031      | 0.031 | 0.042 | 0.026 |
| 0.70  | 0.80  | 0.87            | 0.87      | 0.024     | 0.022     | 0.023      | 0.023 | 0.033 | 0.021 |
| 0.60  | 0.80  | 0.88            | 0.88      | 0.027     | 0.018     | 0.025      | 0.025 | 0.034 | 0.021 |
| 0.50  | 0.80  | 0.70            | 0.50      | 0.028     | 0.014     | 0.025      | 0.025 | 0.038 | 0.018 |
| 0.40  | 0.80  | 0.92            | 0.92      | 0.038     | 0.017     | 0.023      | 0.023 | 0.039 | 0.016 |
| 0.70  | 0.80  | 0.94            | 0.94      | 0.037     | 0.024     | 0.025      | 0.025 | 0.037 | 0.018 |
| 0.70  | 0.80  | 0.95            | 0.95      | 0.042     | 0.030     | 0.029      | 0.029 | 0.041 | 0.021 |
| 0.10  | 0.80  | 0.76            | 0.75      | 0.051     | 0.024     | 0.029      | 0.029 | 0.040 | 0.026 |
| 0.00  | 0.80  | 0.77            | 0.77      | 0.053     | 0.019     | 0.028      | 0.028 | 0.052 | 0.027 |
| -0.10 | 0.80  | 0.77            | 0.77      | 0.052     | 0.013     | 0.032      | 0.032 | 0.050 | 0.028 |
| -0.20 | 0.80  | 1.03            | 1.01      | 0.055     | 0.011     | 0.034      | 0.034 | 0.057 | 0.037 |
| -0.30 | 0.80  | 1.07            | 1.05      | 0.073     | 0.008     | 0.039      | 0.039 | 0.047 | 0.034 |
| -0.40 | 0.80  | 1.13            | 1.13      | 0.068     | 0.009     | 0.036      | 0.036 | 0.043 | 0.037 |
| -0.50 | 0.80  | 1.16            | 1.16      | 0.066     | 0.012     | 0.031      | 0.031 | 0.039 | 0.035 |
| -0.55 | 0.80  | 1.18            | 1.18      | 0.055     | 0.017     | 0.029      | 0.029 | 0.034 | 0.031 |
| -0.60 | 0.80  | 1.19            | 1.19      | 0.043     | 0.020     | 0.028      | 0.028 | 0.031 | 0.031 |
| -0.65 | 0.80  | 1.19            | 1.19      | 0.035     | 0.030     | 0.024      | 0.034 | 0.032 | 0.032 |
| -0.70 | 0.80  | 1.17            | 1.17      | 0.018     | 0.024     | 0.035      | 0.035 | 0.034 | 0.029 |
| -0.75 | 0.80  | 1.15            | 1.15      | 0.012     | 0.002     | 0.037      | 0.037 | 0.035 | 0.030 |
| -0.80 | 0.80  | 1.14            | 1.14      | -0.004    | -0.030    | 0.040      | 0.040 | 0.040 | 0.035 |
| -0.80 | 0.80  | 1.13            | 1.13      | 0.008     | -0.029    | 0.038      | 0.038 | 0.046 | 0.020 |
| -0.80 | 0.70  | 1.08            | 1.08      | 0.053     | 0.000     | 0.043      | 0.044 | 0.030 | 0.029 |
| -0.80 | 0.60  | 1.03            | 1.02      | 0.060     | 0.009     | 0.059      | 0.058 | 0.047 | 0.042 |
| -0.80 | 0.50  | 1.03            | 1.02      | 0.103     | 0.019     | 0.078      | 0.078 | 0.043 | 0.042 |
| -0.80 | 0.40  | 1.13            | 1.12      | 0.129     | 0.011     | 0.060      | 0.061 | 0.032 | 0.030 |
| -0.80 | 0.30  | 1.20            | 1.19      | 0.108     | -0.002    | 0.026      | 0.026 | 0.032 | 0.022 |
| -0.80 | 0.20  | 1.22            | 1.22      | 0.095     | -0.006    | 0.020      | 0.020 | 0.035 | 0.014 |
| -0.80 | 0.10  | 1.22            | 1.22      | 0.080     | 0.003     | 0.020      | 0.020 | 0.024 | 0.017 |
| -0.80 | 0.00  | 1.22            | 1.22      | 0.075     | 0.006     | 0.023      | 0.023 | 0.040 | 0.013 |
| -0.80 | -0.10 | 1.21            | 1.21      | 0.076     | 0.014     | 0.032      | 0.031 | 0.048 | 0.015 |
| -0.80 | -0.20 | 1.22            | 1.22      | 0.079     | 0.018     | 0.024      | 0.024 | 0.026 | 0.016 |
| -0.80 | -0.30 | 1.22            | 1.22      | 0.098     | 0.016     | 0.025      | 0.025 | 0.047 | 0.012 |
| -0.80 | -0.40 | 1.20            | 1.20      | 0.097     | 0.008     | 0.027      | 0.027 | 0.024 | 0.017 |
| -0.80 | -0.50 | 1.14            | 1.14      | 0.076     | -0.014    | 0.058      | 0.059 | 0.035 | 0.024 |
| -0.80 | -0.60 | 1.11            | 1.11      | 0.075     | 0.017     | 0.054      | 0.053 | 0.034 | 0.027 |
| -0.80 | -0.70 | 1.11            | 1.11      | 0.052     | -0.003    | 0.039      | 0.040 | 0.038 | 0.025 |
| -0.80 | -0.80 | 1.14            | 1.14      | 0.070     | 0.014     | 0.052      | 0.052 | 0.039 | 0.027 |
| -0.85 | 0.80  | 1.14            | 1.13      | -0.011    | -0.095    | 0.078      | 0.079 | 0.067 | 0.045 |
| -0.85 | 0.70  | 1.05            | 1.05      | 0.042     | -0.062    | 0.037      | 0.037 | 0.040 | 0.026 |
| -0.85 | 0.60  | 0.95            | 0.95      | 0.051     | -0.042    | 0.039      | 0.040 | 0.042 | 0.043 |
| -0.85 | 0.50  | 0.85            | 0.85      | 0.083     | -0.016    | 0.053      | 0.053 | 0.045 | 0.041 |
| -0.85 | 0.40  | 0.88            | 0.87      | 0.115     | -0.036    | 0.071      | 0.071 | 0.047 | 0.048 |
| -0.85 | 0.30  | 1.12            | 1.11      | 0.111     | -0.042    | 0.051      | 0.050 | 0.074 | 0.015 |
| -0.85 | 0.20  | 1.15            | 1.15      | 0.005     | -0.024    | 0.038      | 0.038 | 0.025 | 0.020 |
| -0.85 | 0.10  | 1.18            | 1.17      | 0.070     | -0.009    | 0.033      | 0.033 | 0.029 | 0.021 |
| -0.85 | 0.00  | 1.17            | 1.16      | 0.070     | 0.002     | 0.037      | 0.039 | 0.060 | 0.021 |
| -0.85 | -0.10 | 1.18            | 1.18      | 0.065     | 0.013     | 0.041      | 0.041 | 0.035 | 0.021 |
| -0.85 | -0.20 | 1.17            | 1.16      | 0.073     | 0.011     | 0.033      | 0.033 | 0.023 | 0.025 |
| -0.85 | -0.30 | 1.15            | 1.12      | 0.090     | 0.026     | 0.077      | 0.079 | 0.031 | 0.024 |
| -0.85 | -0.40 | 1.09            | 1.08      | 0.096     | 0.024     | 0.048      | 0.049 | 0.038 | 0.024 |
| -0.85 | -0.50 | 0.95            | 0.94      | 0.110     | 0.025     | 0.076      | 0.076 | 0.054 | 0.048 |
| -0.85 | -0.60 | 0.91            | 0.91      | 0.082     | 0.014     | 0.061      | 0.060 | 0.055 | 0.045 |
| -0.85 | -0.70 | 1.02            | 1.01      | 0.051     | 0.032     | 0.039      | 0.040 | 0.050 | 0.036 |
| -0.85 | -0.80 | 1.10            | 1.10      | 0.034     | 0.054     | 0.037      | 0.037 | 0.040 | 0.025 |
| -0.90 | 0.80  | 1.08            | 1.06      | -0.009    | -0.207    | 0.068      | 0.069 | 0.059 | 0.063 |
| -0.90 | 0.70  | 1.07            | 1.05      | 0.038     | -0.201    | 0.058      | 0.060 | 0.050 | 0.054 |
| -0.90 | 0.60  | 1.01            | 0.99      | 0.046     | -0.159    | 0.059      | 0.060 | 0.051 | 0.055 |
| -0.90 | 0.50  | 0.93            | 0.91      | 0.075     | -0.144    | 0.054      | 0.054 | 0.057 | 0.059 |
| -0.90 | 0.40  | 0.79            | 0.77      | 0.104     | -0.094    | 0.059      | 0.059 | 0.057 | 0.057 |

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| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U'}_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.70 | 0.30  | 0.93            | 0.92      | 0.066     | -0.065    | 0.072            | 0.072 | 0.046 | 0.050 |
| -0.50 | 0.20  | 1.04            | 1.03      | 0.070     | -0.045    | 0.059            | 0.059 | 0.037 | 0.033 |
| -0.90 | 0.10  | 1.09            | 1.08      | 0.063     | -0.027    | 0.057            | 0.057 | 0.037 | 0.035 |
| -0.90 | 0.00  | 1.11            | 1.11      | 0.054     | -0.010    | 0.044            | 0.044 | 0.034 | 0.034 |
| -0.90 | -0.10 | 1.11            | 1.10      | 0.054     | 0.006     | 0.051            | 0.051 | 0.041 | 0.032 |
| -0.90 | -0.20 | 1.08            | 1.08      | 0.066     | 0.018     | 0.052            | 0.051 | 0.040 | 0.033 |
| -0.90 | -0.30 | 1.03            | 1.02      | 0.086     | 0.034     | 0.060            | 0.061 | 0.048 | 0.037 |
| -0.90 | -0.40 | 0.90            | 0.89      | 0.083     | 0.056     | 0.079            | 0.080 | 0.054 | 0.048 |
| -0.70 | -0.50 | 0.81            | 0.80      | 0.089     | 0.059     | 0.055            | 0.056 | 0.045 | 0.047 |
| -0.70 | -0.60 | 0.91            | 0.90      | 0.059     | 0.079     | 0.041            | 0.041 | 0.054 | 0.047 |
| -0.70 | -0.70 | 1.04            | 1.03      | 0.037     | 0.105     | 0.042            | 0.042 | 0.052 | 0.044 |
| -0.90 | -0.80 | 1.11            | 1.10      | 0.018     | 0.128     | 0.038            | 0.037 | 0.052 | 0.043 |
| -0.93 | 0.80  | 1.03            | 1.00      | 0.011     | -0.259    | 0.081            | 0.085 | 0.066 | 0.070 |
| -0.93 | 0.70  | 0.81            | 0.77      | 0.022     | -0.200    | 0.395            | 0.410 | 0.060 | 0.121 |
| -0.93 | 0.60  | 0.99            | 0.96      | 0.044     | -0.247    | 0.080            | 0.078 | 0.054 | 0.074 |
| -0.93 | 0.50  | 0.95            | 0.91      | 0.085     | -0.235    | 0.066            | 0.069 | 0.051 | 0.064 |
| -0.93 | 0.40  | 0.78            | 0.76      | 0.085     | -0.168    | 0.061            | 0.059 | 0.059 | 0.060 |
| -0.93 | 0.30  | 0.81            | 0.80      | 0.054     | -0.091    | 0.072            | 0.074 | 0.049 | 0.053 |
| -0.93 | 0.20  | 0.90            | 0.89      | 0.061     | -0.050    | 0.077            | 0.077 | 0.053 | 0.057 |
| -0.93 | 0.10  | 0.96            | 0.96      | 0.051     | -0.029    | 0.063            | 0.064 | 0.043 | 0.050 |
| -0.93 | 0.00  | 0.98            | 0.98      | 0.038     | -0.009    | 0.064            | 0.064 | 0.045 | 0.041 |
| -0.93 | -0.10 | 1.02            | 1.01      | 0.043     | 0.004     | 0.071            | 0.071 | 0.048 | 0.045 |
| -0.93 | -0.20 | 0.98            | 0.98      | 0.051     | 0.032     | 0.071            | 0.071 | 0.041 | 0.044 |
| -0.93 | -0.30 | 0.90            | 0.89      | 0.070     | 0.052     | 0.074            | 0.072 | 0.102 | 0.050 |
| -0.93 | -0.40 | 0.80            | 0.79      | 0.058     | 0.094     | 0.075            | 0.077 | 0.047 | 0.057 |
| -0.93 | -0.50 | 0.82            | 0.80      | 0.085     | 0.134     | 0.065            | 0.063 | 0.055 | 0.054 |
| -0.93 | -0.60 | 0.95            | 0.73      | 0.047     | 0.149     | 0.057            | 0.058 | 0.055 | 0.055 |
| -0.93 | -0.70 | 1.02            | 1.00      | 0.049     | 0.173     | 0.075            | 0.074 | 0.059 | 0.057 |
| -0.93 | -0.80 | 1.07            | 1.05      | 0.011     | 0.177     | 0.078            | 0.076 | 0.070 | 0.045 |

Table D-5, Station 10,  $\theta = 90^\circ$ 

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.00  | 0.00  | 0.95            | 0.94      | 0.037     | 0.004     | 0.053            | 0.053 | 0.061 | 0.044 |
| 0.20  | 0.00  | 0.93            | 0.98      | 0.053     | 0.010     | 0.043            | 0.043 | 0.045 | 0.031 |
| 0.40  | 0.00  | 1.01            | 1.01      | 0.061     | 0.015     | 0.030            | 0.030 | 0.032 | 0.021 |
| 0.50  | 0.00  | 1.02            | 1.02      | 0.079     | 0.011     | 0.023            | 0.023 | 0.028 | 0.011 |
| 0.40  | 0.00  | 1.03            | 1.03      | 0.085     | 0.011     | 0.022            | 0.022 | 0.022 | 0.009 |
| 0.20  | 0.00  | 0.68            | 0.66      | 0.095     | 0.013     | 0.398            | 0.416 | 0.016 | 0.018 |
| 0.20  | 0.00  | 1.04            | 1.04      | 0.105     | 0.010     | 0.060            | 0.060 | 0.037 | 0.011 |
| 0.10  | 0.00  | 1.07            | 1.06      | 0.115     | 0.010     | 0.022            | 0.022 | 0.028 | 0.011 |
| 0.00  | 0.00  | 1.07            | 1.07      | 0.124     | 0.012     | 0.021            | 0.021 | 0.024 | 0.011 |
| -0.10 | 0.00  | 1.07            | 1.08      | 0.135     | 0.013     | 0.023            | 0.023 | 0.032 | 0.010 |
| -0.20 | 0.00  | 1.11            | 1.07      | 0.147     | 0.016     | 0.022            | 0.022 | 0.023 | 0.012 |
| -0.30 | 0.00  | 1.11            | 1.10      | 0.158     | 0.017     | 0.025            | 0.025 | 0.027 | 0.017 |
| -0.40 | 0.00  | 1.12            | 1.10      | 0.178     | 0.021     | 0.022            | 0.022 | 0.020 | 0.010 |
| -0.50 | 0.00  | 1.14            | 1.12      | 0.206     | 0.020     | 0.020            | 0.020 | 0.029 | 0.010 |
| -0.55 | 0.00  | 1.14            | 1.12      | 0.217     | 0.020     | 0.027            | 0.027 | 0.036 | 0.011 |
| -0.60 | 0.00  | 1.11            | 1.09      | 0.222     | 0.017     | 0.034            | 0.034 | 0.047 | 0.016 |
| -0.65 | 0.00  | 1.02            | 1.00      | 0.210     | 0.005     | 0.062            | 0.063 | 0.049 | 0.027 |
| -0.70 | 0.00  | 0.87            | 0.85      | 0.177     | -0.012    | 0.065            | 0.067 | 0.051 | 0.052 |
| -0.75 | 0.00  | 0.73            | 0.72      | 0.130     | -0.028    | 0.064            | 0.066 | 0.050 | 0.051 |
| -0.80 | 0.00  | 0.63            | 0.62      | 0.083     | -0.021    | 0.059            | 0.060 | 0.052 | 0.045 |
| -0.80 | -0.10 | 0.66            | 0.65      | 0.082     | 0.021     | 0.064            | 0.065 | 0.043 | 0.046 |
| -0.75 | -0.10 | 0.76            | 0.75      | 0.128     | 0.007     | 0.070            | 0.071 | 0.042 | 0.049 |
| -0.70 | -0.10 | 0.87            | 0.87      | 0.174     | -0.002    | 0.074            | 0.075 | 0.050 | 0.045 |
| -0.65 | -0.10 | 1.00            | 0.77      | 0.212     | -0.005    | 0.058            | 0.058 | 0.041 | 0.037 |
| -0.60 | -0.10 | 1.10            | 1.07      | 0.224     | -0.010    | 0.038            | 0.037 | 0.038 | 0.016 |
| -0.55 | -0.10 | 1.13            | 1.10      | 0.214     | -0.004    | 0.025            | 0.025 | 0.040 | 0.011 |
| -0.50 | -0.10 | 1.13            | 1.11      | 0.205     | -0.008    | 0.025            | 0.026 | 0.028 | 0.010 |
| -0.40 | -0.10 | 1.12            | 1.10      | 0.180     | -0.005    | 0.025            | 0.025 | 0.030 | 0.010 |
| -0.30 | -0.10 | 1.07            | 1.08      | 0.161     | -0.001    | 0.023            | 0.023 | 0.031 | 0.010 |
| -0.20 | -0.10 | 1.03            | 1.07      | 0.147     | -0.001    | 0.024            | 0.024 | 0.023 | 0.009 |
| -0.10 | -0.10 | 1.08            | 1.07      | 0.134     | 0.001     | 0.025            | 0.025 | 0.019 | 0.005 |
| 0.00  | -0.10 | 1.05            | 1.05      | 0.125     | 0.002     | 0.024            | 0.024 | 0.023 | 0.010 |
| 0.10  | -0.10 | 1.06            | 1.05      | 0.118     | 0.007     | 0.025            | 0.025 | 0.019 | 0.010 |
| 0.20  | -0.10 | 1.04            | 1.04      | 0.110     | 0.005     | 0.024            | 0.023 | 0.022 | 0.012 |
| 0.30  | -0.10 | 1.05            | 1.03      | 0.101     | 0.006     | 0.024            | 0.024 | 0.021 | 0.010 |
| 0.40  | -0.10 | 1.07            | 1.01      | 0.092     | 0.006     | 0.024            | 0.024 | 0.025 | 0.014 |
| 0.50  | -0.10 | 1.01            | 1.01      | 0.078     | 0.004     | 0.025            | 0.024 | 0.018 | 0.011 |
| 0.60  | -0.10 | 1.00            | 1.00      | 0.064     | 0.009     | 0.027            | 0.028 | 0.028 | 0.015 |
| 0.70  | -0.10 | 0.98            | 0.73      | 0.060     | 0.003     | 0.037            | 0.037 | 0.041 | 0.031 |
| 0.80  | -0.10 | 0.95            | 0.94      | 0.039     | 0.005     | 0.049            | 0.049 | 0.057 | 0.041 |
| 0.80  | -0.20 | 0.94            | 0.94      | 0.027     | -0.006    | 0.058            | 0.058 | 0.065 | 0.041 |
| 0.70  | -0.20 | 0.98            | 0.78      | 0.056     | -0.004    | 0.044            | 0.044 | 0.042 | 0.031 |
| 0.60  | -0.20 | 1.01            | 1.01      | 0.073     | -0.002    | 0.020            | 0.028 | 0.028 | 0.021 |
| 0.50  | -0.20 | 1.02            | 1.02      | 0.082     | 0.000     | 0.023            | 0.023 | 0.025 | 0.014 |
| 0.40  | -0.20 | 1.03            | 1.02      | 0.097     | -0.003    | 0.026            | 0.026 | 0.031 | 0.013 |
| 0.30  | -0.20 | 1.04            | 1.03      | 0.101     | 0.003     | 0.024            | 0.024 | 0.024 | 0.012 |
| 0.20  | -0.20 | 1.04            | 1.04      | 0.110     | 0.007     | 0.024            | 0.024 | 0.020 | 0.012 |
| 0.10  | -0.20 | 1.05            | 1.04      | 0.120     | -0.001    | 0.024            | 0.025 | 0.024 | 0.011 |
| 0.00  | -0.20 | 1.07            | 1.06      | 0.125     | -0.003    | 0.026            | 0.026 | 0.017 | 0.010 |
| -0.10 | -0.20 | 1.08            | 1.07      | 0.133     | -0.004    | 0.028            | 0.028 | 0.018 | 0.010 |
| -0.20 | -0.20 | 1.09            | 1.08      | 0.147     | -0.010    | 0.028            | 0.028 | 0.020 | 0.011 |
| -0.30 | -0.20 | 1.11            | 1.10      | 0.156     | -0.014    | 0.025            | 0.025 | 0.017 | 0.011 |
| -0.40 | -0.20 | 1.11            | 1.10      | 0.172     | -0.023    | 0.024            | 0.024 | 0.017 | 0.010 |
| -0.50 | -0.20 | 1.12            | 1.11      | 0.198     | -0.033    | 0.025            | 0.025 | 0.019 | 0.011 |
| -0.55 | -0.20 | 1.13            | 1.11      | 0.213     | -0.041    | 0.025            | 0.026 | 0.024 | 0.011 |
| -0.60 | -0.20 | 1.10            | 1.08      | 0.223     | -0.041    | 0.044            | 0.045 | 0.027 | 0.011 |
| -0.65 | -0.20 | 0.90            | 0.87      | 0.101     | -0.033    | 0.074            | 0.076 | 0.037 | 0.048 |
| -0.70 | -0.20 | 0.71            | 0.68      | 0.167     | 0.003     | 0.076            | 0.075 | 0.054 | 0.059 |
| -0.75 | -0.20 | 0.65            | 0.63      | 0.153     | 0.045     | 0.082            | 0.083 | 0.058 | 0.068 |
| -0.80 | -0.20 | 0.59            | 0.56      | 0.124     | 0.064     | 0.093            | 0.096 | 0.060 | 0.064 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.80 | -0.30 | 0.84            | 0.80      | 0.727     | 0.074     | 0.090            | 0.072 | 0.067 | 0.066 |
| -0.75 | -0.30 | 0.84            | 0.81      | 0.720     | 0.005     | 0.067            | 0.068 | 0.064 | 0.054 |
| -0.70 | -0.30 | 0.79            | 0.76      | 0.185     | -0.064    | 0.069            | 0.070 | 0.071 | 0.052 |
| -0.65 | -0.30 | 0.83            | 0.80      | 0.164     | -0.056    | 0.095            | 0.097 | 0.055 | 0.050 |
| -0.60 | -0.30 | 1.08            | 1.07      | 0.186     | -0.051    | 0.084            | 0.085 | 0.035 | 0.034 |
| -0.55 | -0.30 | 1.14            | 1.12      | 0.133     | -0.070    | 0.032            | 0.032 | 0.026 | 0.014 |
| 0.50  | -0.30 | 1.11            | 1.11      | 0.176     | -0.060    | 0.024            | 0.024 | 0.021 | 0.011 |
| -0.40 | -0.30 | 1.14            | 1.13      | 0.162     | -0.077    | 0.025            | 0.025 | 0.023 | 0.010 |
| 0.30  | -0.30 | 1.11            | 1.10      | 0.147     | -0.026    | 0.025            | 0.025 | 0.022 | 0.010 |
| -0.20 | -0.30 | 1.07            | 1.08      | 0.139     | -0.016    | 0.025            | 0.026 | 0.022 | 0.009 |
| -0.10 | -0.30 | 1.09            | 1.08      | 0.128     | -0.011    | 0.025            | 0.026 | 0.024 | 0.010 |
| 0.00  | -0.30 | 1.07            | 1.06      | 0.123     | -0.006    | 0.027            | 0.027 | 0.020 | 0.010 |
| 0.10  | -0.30 | 1.05            | 1.05      | 0.113     | -0.005    | 0.026            | 0.026 | 0.019 | 0.010 |
| 0.20  | -0.30 | 1.05            | 1.05      | 0.106     | -0.002    | 0.023            | 0.023 | 0.020 | 0.010 |
| 0.30  | -0.30 | 1.04            | 1.03      | 0.099     | 0.002     | 0.023            | 0.023 | 0.020 | 0.007 |
| 0.40  | -0.30 | 1.03            | 1.02      | 0.091     | 0.001     | 0.027            | 0.027 | 0.018 | 0.010 |
| 0.50  | -0.30 | 1.01            | 1.01      | 0.080     | -0.001    | 0.026            | 0.026 | 0.018 | 0.011 |
| 0.60  | -0.30 | 1.00            | 1.00      | 0.072     | -0.002    | 0.024            | 0.025 | 0.017 | 0.016 |
| 0.70  | -0.30 | 0.99            | 0.99      | 0.063     | -0.010    | 0.030            | 0.030 | 0.034 | 0.027 |
| 0.80  | -0.30 | 0.96            | 0.96      | 0.014     | -0.013    | 0.050            | 0.050 | 0.070 | 0.037 |
| 0.80  | -0.40 | 0.97            | 0.96      | 0.026     | -0.008    | 0.046            | 0.046 | 0.068 | 0.037 |
| 0.70  | -0.40 | 1.00            | 1.00      | 0.054     | -0.001    | 0.027            | 0.027 | 0.045 | 0.021 |
| 0.60  | -0.40 | 1.02            | 1.02      | 0.071     | -0.003    | 0.023            | 0.023 | 0.024 | 0.015 |
| 0.50  | -0.40 | 1.02            | 1.02      | 0.083     | -0.002    | 0.022            | 0.023 | 0.021 | 0.011 |
| 0.40  | -0.40 | 1.04            | 1.04      | 0.089     | 0.000     | 0.022            | 0.022 | 0.017 | 0.010 |
| 0.30  | -0.40 | 1.04            | 1.04      | 0.077     | -0.001    | 0.021            | 0.021 | 0.020 | 0.011 |
| 0.20  | -0.40 | 1.08            | 1.05      | 0.105     | -0.003    | 0.023            | 0.023 | 0.017 | 0.007 |
| 0.10  | -0.40 | 1.07            | 1.06      | 0.111     | 0.006     | 0.023            | 0.023 | 0.026 | 0.009 |
| 0.00  | -0.40 | 1.03            | 1.02      | 0.117     | -0.010    | 0.023            | 0.023 | 0.017 | 0.009 |
| -0.10 | -0.40 | 1.07            | 1.08      | 0.125     | -0.018    | 0.023            | 0.023 | 0.019 | 0.010 |
| 0.20  | -0.40 | 1.10            | 1.07      | 0.132     | -0.025    | 0.025            | 0.025 | 0.019 | 0.011 |
| 0.30  | -0.40 | 1.11            | 1.10      | 0.137     | 0.033     | 0.022            | 0.022 | 0.020 | 0.010 |
| 0.40  | -0.40 | 1.15            | 1.12      | 0.147     | -0.040    | 0.025            | 0.025 | 0.021 | 0.011 |
| 0.50  | -0.40 | 1.14            | 1.13      | 0.143     | -0.072    | 0.024            | 0.024 | 0.021 | 0.012 |
| 0.55  | -0.40 | 1.15            | 1.14      | 0.142     | -0.083    | 0.026            | 0.026 | 0.026 | 0.017 |
| 0.60  | -0.40 | 1.12            | 1.11      | 0.133     | 0.109     | 0.053            | 0.057 | 0.033 | 0.017 |
| 0.65  | -0.40 | 0.97            | 0.98      | 0.098     | -0.171    | 0.106            | 0.107 | 0.054 | 0.050 |
| 0.70  | -0.40 | 0.83            | 0.82      | 0.076     | -0.125    | 0.067            | 0.068 | 0.056 | 0.053 |
| 0.75  | -0.40 | 0.85            | 0.84      | 0.103     | -0.054    | 0.057            | 0.055 | 0.055 | 0.052 |
| 0.80  | -0.40 | 0.86            | 0.84      | 0.122     | 0.053     | 0.060            | 0.060 | 0.056 | 0.048 |
| 0.80  | -0.50 | 0.84            | 0.84      | 0.030     | -0.022    | 0.055            | 0.055 | 0.056 | 0.049 |
| 0.75  | -0.50 | 0.89            | 0.83      | 0.017     | -0.072    | 0.074            | 0.075 | 0.046 | 0.054 |
| 0.70  | -0.50 | 0.75            | 0.94      | 0.044     | -0.091    | 0.080            | 0.081 | 0.046 | 0.054 |
| 0.65  | -0.50 | 1.07            | 1.06      | 0.075     | -0.101    | 0.065            | 0.066 | 0.037 | 0.041 |
| 0.60  | -0.50 | 1.15            | 1.15      | 0.101     | -0.092    | 0.030            | 0.029 | 0.027 | 0.031 |
| 0.55  | -0.50 | 1.14            | 1.14      | 0.111     | -0.079    | 0.025            | 0.025 | 0.022 | 0.012 |
| 0.50  | -0.50 | 1.14            | 1.13      | 0.116     | -0.068    | 0.027            | 0.027 | 0.022 | 0.015 |
| 0.40  | -0.50 | 1.12            | 1.12      | 0.123     | -0.050    | 0.024            | 0.024 | 0.019 | 0.012 |
| 0.30  | -0.50 | 1.11            | 1.10      | 0.124     | -0.038    | 0.025            | 0.025 | 0.018 | 0.011 |
| 0.20  | -0.50 | 1.10            | 1.09      | 0.120     | -0.020    | 0.027            | 0.026 | 0.020 | 0.010 |
| 0.10  | -0.50 | 1.08            | 1.07      | 0.118     | -0.020    | 0.025            | 0.025 | 0.019 | 0.010 |
| 0.00  | -0.50 | 1.07            | 1.06      | 0.117     | -0.016    | 0.023            | 0.023 | 0.021 | 0.010 |
| 0.10  | -0.50 | 1.06            | 1.05      | 0.117     | -0.012    | 0.026            | 0.026 | 0.021 | 0.011 |
| 0.20  | -0.50 | 1.05            | 1.04      | 0.105     | -0.007    | 0.024            | 0.024 | 0.022 | 0.010 |
| 0.30  | -0.50 | 0.87            | 0.81      | 0.097     | -0.009    | 0.360            | 0.375 | 0.016 | 0.010 |
| 0.40  | -0.50 | 1.03            | 1.03      | 0.071     | -0.004    | 0.022            | 0.022 | 0.020 | 0.012 |
| 0.50  | -0.50 | 1.02            | 1.02      | 0.082     | -0.002    | 0.022            | 0.022 | 0.010 | 0.011 |
| 0.60  | -0.50 | 1.01            | 1.01      | 0.074     | 0.001     | 0.024            | 0.024 | 0.025 | 0.017 |
| 0.70  | -0.50 | 0.79            | 0.79      | 0.059     | -0.005    | 0.037            | 0.037 | 0.036 | 0.024 |
| 0.80  | -0.50 | 0.95            | 0.95      | 0.041     | -0.007    | 0.055            | 0.056 | 0.057 | 0.017 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.30     | -0.60    | 0.96            | 0.76      | 0.046     | -0.019    | 0.054      | 0.054 | 0.050 | 0.039 |
| 0.70     | -0.60    | 1.00            | 1.00      | 0.058     | -0.007    | 0.033      | 0.033 | 0.056 | 0.026 |
| 0.60     | -0.60    | 1.01            | 1.01      | 0.074     | -0.002    | 0.025      | 0.025 | 0.036 | 0.020 |
| 0.50     | -0.60    | 1.03            | 1.02      | 0.083     | -0.002    | 0.024      | 0.024 | 0.023 | 0.014 |
| 0.40     | -0.60    | 1.04            | 1.04      | 0.093     | -0.003    | 0.024      | 0.024 | 0.026 | 0.012 |
| 0.30     | -0.60    | 1.05            | 1.04      | 0.100     | -0.002    | 0.021      | 0.021 | 0.024 | 0.012 |
| 0.20     | -0.60    | 1.06            | 1.05      | 0.106     | -0.005    | 0.022      | 0.022 | 0.023 | 0.010 |
| 0.10     | -0.60    | 1.07            | 1.06      | 0.112     | -0.008    | 0.023      | 0.022 | 0.023 | 0.010 |
| 0.00     | -0.60    | 1.08            | 1.07      | 0.115     | -0.012    | 0.023      | 0.023 | 0.021 | 0.010 |
| -0.10    | -0.60    | 1.07            | 1.09      | 0.112     | -0.016    | 0.020      | 0.020 | 0.022 | 0.011 |
| -0.20    | -0.60    | 1.10            | 1.10      | 0.114     | -0.023    | 0.022      | 0.022 | 0.027 | 0.011 |
| -0.30    | -0.60    | 1.12            | 1.11      | 0.113     | -0.031    | 0.020      | 0.020 | 0.022 | 0.010 |
| -0.40    | -0.60    | 1.13            | 1.12      | 0.111     | -0.041    | 0.020      | 0.021 | 0.019 | 0.010 |
| -0.50    | -0.60    | 1.15            | 1.14      | 0.098     | -0.056    | 0.022      | 0.022 | 0.022 | 0.010 |
| -0.55    | -0.60    | 1.15            | 1.14      | 0.092     | -0.063    | 0.023      | 0.023 | 0.022 | 0.011 |
| -0.60    | -0.60    | 1.16            | 1.15      | 0.084     | -0.067    | 0.024      | 0.024 | 0.023 | 0.013 |
| -0.65    | -0.60    | 1.14            | 1.13      | 0.074     | -0.071    | 0.036      | 0.036 | 0.027 | 0.021 |
| -0.70    | -0.60    | 1.03            | 1.02      | 0.055     | -0.062    | 0.067      | 0.067 | 0.035 | 0.040 |
| -0.75    | -0.60    | 0.74            | 0.74      | 0.037     | -0.046    | 0.062      | 0.063 | 0.044 | 0.044 |
| -0.80    | -0.60    | 0.71            | 0.70      | 0.032     | -0.026    | 0.052      | 0.053 | 0.052 | 0.046 |
| -0.80    | 0.70     | 1.01            | 1.01      | 0.024     | -0.021    | 0.046      | 0.046 | 0.043 | 0.037 |
| -0.75    | -0.70    | 1.04            | 1.04      | 0.039     | -0.030    | 0.046      | 0.046 | 0.033 | 0.031 |
| -0.70    | -0.70    | 1.09            | 1.08      | 0.050     | -0.039    | 0.047      | 0.047 | 0.026 | 0.027 |
| -0.65    | -0.70    | 1.15            | 1.15      | 0.061     | -0.051    | 0.070      | 0.070 | 0.024 | 0.017 |
| -0.60    | -0.70    | 1.15            | 1.15      | 0.074     | -0.053    | 0.026      | 0.026 | 0.022 | 0.013 |
| -0.55    | -0.70    | 1.15            | 1.15      | 0.087     | -0.047    | 0.025      | 0.025 | 0.019 | 0.017 |
| -0.50    | -0.70    | 1.14            | 1.13      | 0.090     | -0.045    | 0.025      | 0.025 | 0.021 | 0.012 |
| -0.40    | -0.70    | 1.12            | 1.12      | 0.102     | -0.035    | 0.024      | 0.024 | 0.021 | 0.012 |
| 0.30     | -0.70    | 1.11            | 1.10      | 0.106     | -0.029    | 0.027      | 0.027 | 0.021 | 0.017 |
| -0.20    | -0.70    | 1.07            | 1.08      | 0.114     | -0.023    | 0.025      | 0.025 | 0.020 | 0.015 |
| -0.10    | -0.70    | 1.09            | 1.08      | 0.113     | -0.017    | 0.022      | 0.022 | 0.023 | 0.012 |
| 0.00     | -0.70    | 1.06            | 1.06      | 0.113     | -0.015    | 0.025      | 0.025 | 0.025 | 0.012 |
| 0.10     | -0.70    | 1.06            | 1.05      | 0.108     | -0.010    | 0.024      | 0.024 | 0.020 | 0.011 |
| 0.20     | -0.70    | 1.05            | 1.04      | 0.106     | -0.008    | 0.021      | 0.021 | 0.024 | 0.012 |
| 0.30     | -0.70    | 1.03            | 1.03      | 0.102     | -0.009    | 0.026      | 0.026 | 0.026 | 0.013 |
| 0.40     | -0.70    | 1.02            | 1.02      | 0.098     | -0.005    | 0.021      | 0.022 | 0.024 | 0.014 |
| 0.50     | -0.70    | 1.02            | 1.01      | 0.085     | -0.006    | 0.023      | 0.023 | 0.020 | 0.014 |
| 0.60     | -0.70    | 1.00            | 1.00      | 0.082     | -0.010    | 0.027      | 0.027 | 0.047 | 0.017 |
| 0.70     | -0.70    | 0.99            | 0.99      | 0.024     | -0.010    | 0.043      | 0.041 | 0.121 | 0.031 |
| 0.80     | -0.70    | 0.96            | 0.96      | 0.026     | -0.023    | 0.047      | 0.047 | 0.001 | 0.041 |
| 0.80     | -0.80    | 0.54            | 0.74      | 0.030     | -0.025    | 0.054      | 0.054 | 0.075 | 0.059 |
| 0.70     | -0.80    | 0.97            | 0.98      | 0.027     | -0.015    | 0.028      | 0.025 | 0.123 | 0.050 |
| 0.60     | -0.80    | 1.00            | 1.00      | 0.051     | -0.010    | 0.033      | 0.034 | 0.077 | 0.025 |
| 0.50     | -0.80    | 1.01            | 1.00      | 0.038     | -0.012    | 0.026      | 0.026 | 0.030 | 0.014 |
| 0.40     | -0.80    | 1.02            | 1.01      | 0.050     | -0.005    | 0.025      | 0.026 | 0.026 | 0.017 |
| 0.30     | -0.80    | 1.04            | 1.03      | 0.102     | -0.005    | 0.027      | 0.027 | 0.023 | 0.013 |
| 0.20     | -0.80    | 1.05            | 1.04      | 0.104     | -0.011    | 0.027      | 0.027 | 0.024 | 0.014 |
| 0.10     | -0.80    | 1.05            | 1.04      | 0.102     | -0.010    | 0.027      | 0.027 | 0.027 | 0.015 |
| 0.00     | -0.80    | 1.07            | 1.06      | 0.103     | -0.014    | 0.028      | 0.028 | 0.030 | 0.012 |
| 0.10     | -0.80    | 1.08            | 1.07      | 0.110     | -0.015    | 0.031      | 0.031 | 0.026 | 0.013 |
| -0.10    | 0.80     | 1.10            | 1.07      | 0.103     | -0.020    | 0.031      | 0.031 | 0.023 | 0.017 |
| -0.70    | 0.80     | 1.10            | 1.10      | 0.107     | -0.020    | 0.030      | 0.031 | 0.027 | 0.027 |
| -0.40    | -0.80    | 1.11            | 1.11      | 0.073     | -0.030    | 0.030      | 0.030 | 0.028 | 0.019 |
| -0.50    | -0.80    | 1.12            | 1.12      | 0.082     | -0.037    | 0.032      | 0.032 | 0.027 | 0.024 |
| -0.55    | -0.80    | 1.14            | 1.17      | 0.073     | -0.037    | 0.032      | 0.032 | 0.026 | 0.026 |
| 0.60     | -0.80    | 1.14            | 1.14      | 0.063     | -0.039    | 0.030      | 0.030 | 0.025 | 0.024 |
| -0.67    | -0.80    | 1.14            | 1.17      | 0.045     | -0.041    | 0.034      | 0.034 | 0.027 | 0.027 |
| -0.70    | -0.80    | 1.16            | 1.10      | 0.038     | -0.031    | 0.041      | 0.041 | 0.030 | 0.027 |
| -0.75    | -0.80    | 1.07            | 1.07      | 0.028     | -0.024    | 0.045      | 0.045 | 0.077 | 0.031 |
| -0.80    | -0.80    | 1.07            | 1.06      | 0.017     | -0.010    | 0.054      | 0.054 | 0.041 | 0.033 |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.05 | 1.19            | 1.10      | -0.015    | -0.013    | 0.062      | 0.062 | 0.063 | 0.046 |
| -0.75 | -0.05 | 1.19            | 1.18      | 0.000     | -0.014    | 0.062      | 0.062 | 0.053 | 0.045 |
| -0.70 | -0.05 | 1.16            | 1.16      | 0.012     | -0.017    | 0.056      | 0.057 | 0.055 | 0.044 |
| -0.65 | -0.05 | 1.16            | 1.15      | 0.017     | -0.019    | 0.062      | 0.062 | 0.056 | 0.036 |
| -0.60 | -0.05 | 1.15            | 1.15      | 0.035     | -0.019    | 0.050      | 0.050 | 0.052 | 0.035 |
| -0.55 | -0.05 | 1.14            | 1.14      | 0.034     | -0.021    | 0.047      | 0.047 | 0.059 | 0.038 |
| 0.50  | -0.05 | 1.13            | 1.13      | 0.044     | -0.015    | 0.045      | 0.045 | 0.052 | 0.036 |
| -0.40 | -0.05 | 1.13            | 1.12      | 0.075     | -0.020    | 0.045      | 0.045 | 0.046 | 0.030 |
| -0.30 | -0.05 | 1.10            | 1.10      | 0.080     | -0.015    | 0.040      | 0.040 | 0.054 | 0.031 |
| -0.20 | -0.05 | 1.09            | 1.08      | 0.089     | -0.011    | 0.037      | 0.037 | 0.050 | 0.028 |
| -0.10 | -0.05 | 1.07            | 1.07      | 0.098     | -0.006    | 0.034      | 0.034 | 0.050 | 0.024 |
| 0.00  | -0.05 | 1.08            | 1.07      | 0.105     | 0.000     | 0.037      | 0.037 | 0.046 | 0.026 |
| 0.10  | -0.05 | 1.05            | 1.04      | 0.115     | 0.000     | 0.033      | 0.034 | 0.044 | 0.027 |
| 0.20  | -0.05 | 1.04            | 1.03      | 0.108     | 0.005     | 0.031      | 0.031 | 0.050 | 0.022 |
| 0.30  | 0.05  | 1.03            | 1.02      | 0.109     | -0.004    | 0.037      | 0.037 | 0.050 | 0.021 |
| 0.40  | -0.05 | 1.01            | 1.01      | 0.118     | -0.005    | 0.034      | 0.034 | 0.048 | 0.025 |
| 0.50  | -0.05 | 0.99            | 0.98      | 0.116     | -0.008    | 0.043      | 0.044 | 0.048 | 0.026 |
| 0.60  | -0.05 | 0.96            | 0.95      | 0.111     | -0.011    | 0.047      | 0.047 | 0.038 | 0.029 |
| 0.70  | -0.05 | 0.94            | 0.93      | 0.114     | -0.025    | 0.054      | 0.054 | 0.043 | 0.028 |
| 0.80  | -0.05 | 0.92            | 0.92      | 0.095     | -0.029    | 0.050      | 0.050 | 0.044 | 0.037 |
| -0.80 | -0.90 | 1.14            | 1.13      | 0.007     | -0.009    | 0.073      | 0.074 | 0.046 | 0.048 |
| -0.75 | -0.90 | 1.13            | 1.12      | 0.019     | -0.012    | 0.075      | 0.076 | 0.044 | 0.053 |
| -0.70 | -0.90 | 1.11            | 1.11      | 0.033     | -0.022    | 0.069      | 0.069 | 0.040 | 0.047 |
| -0.65 | -0.90 | 1.12            | 1.12      | 0.038     | -0.022    | 0.071      | 0.071 | 0.046 | 0.048 |
| -0.60 | -0.90 | 1.11            | 1.10      | 0.051     | -0.022    | 0.073      | 0.074 | 0.043 | 0.048 |
| -0.55 | -0.90 | 1.09            | 1.09      | 0.061     | -0.020    | 0.071      | 0.071 | 0.042 | 0.039 |
| -0.50 | -0.90 | 1.09            | 1.07      | 0.066     | -0.016    | 0.068      | 0.068 | 0.040 | 0.045 |
| -0.40 | -0.90 | 1.09            | 1.08      | 0.083     | -0.015    | 0.064      | 0.064 | 0.043 | 0.047 |
| -0.30 | -0.50 | 1.07            | 1.06      | 0.095     | -0.012    | 0.054      | 0.055 | 0.041 | 0.035 |
| -0.20 | -0.90 | 1.07            | 1.06      | 0.102     | -0.018    | 0.053      | 0.053 | 0.050 | 0.026 |
| -0.10 | -0.90 | 1.06            | 1.06      | 0.112     | -0.014    | 0.049      | 0.049 | 0.033 | 0.025 |
| 0.00  | -0.90 | 1.05            | 1.04      | 0.115     | -0.009    | 0.047      | 0.047 | 0.042 | 0.024 |
| 0.10  | -0.90 | 1.05            | 1.05      | 0.111     | -0.009    | 0.047      | 0.047 | 0.041 | 0.031 |
| 0.20  | -0.90 | 1.03            | 1.02      | 0.111     | -0.004    | 0.042      | 0.042 | 0.041 | 0.027 |
| 0.30  | -0.90 | 1.01            | 1.00      | 0.113     | 0.007     | 0.051      | 0.051 | 0.041 | 0.028 |
| 0.40  | -0.90 | 1.00            | 0.95      | 0.105     | -0.001    | 0.044      | 0.044 | 0.040 | 0.023 |
| 0.50  | -0.90 | 0.97            | 0.96      | 0.115     | -0.010    | 0.048      | 0.048 | 0.044 | 0.027 |
| 0.60  | -0.90 | 0.96            | 0.96      | 0.112     | -0.012    | 0.048      | 0.048 | 0.038 | 0.027 |
| 0.70  | -0.90 | 0.91            | 0.90      | 0.092     | -0.018    | 0.056      | 0.055 | 0.047 | 0.021 |
| 0.80  | -0.90 | 0.89            | 0.89      | 0.091     | -0.077    | 0.054      | 0.055 | 0.057 | 0.035 |
| -0.80 | 0.93  | 1.09            | 1.08      | -0.015    | -0.012    | 0.081      | 0.081 | 0.060 | 0.044 |
| -0.75 | 0.93  | 1.08            | 1.08      | 0.001     | -0.017    | 0.076      | 0.075 | 0.057 | 0.047 |
| -0.70 | 0.93  | 1.07            | 1.07      | 0.005     | -0.019    | 0.074      | 0.074 | 0.057 | 0.047 |
| -0.65 | 0.93  | 1.07            | 1.08      | 0.029     | -0.025    | 0.071      | 0.071 | 0.054 | 0.046 |
| -0.60 | 0.93  | 1.07            | 1.06      | 0.039     | -0.015    | 0.082      | 0.082 | 0.053 | 0.047 |
| -0.55 | 0.93  | 1.07            | 1.07      | 0.042     | -0.021    | 0.072      | 0.072 | 0.053 | 0.046 |
| -0.50 | 0.93  | 1.06            | 1.05      | 0.042     | -0.014    | 0.071      | 0.071 | 0.058 | 0.045 |
| -0.40 | 0.93  | 1.05            | 1.05      | 0.066     | -0.018    | 0.067      | 0.067 | 0.050 | 0.040 |
| -0.30 | 0.93  | 1.05            | 1.05      | 0.076     | -0.015    | 0.062      | 0.062 | 0.051 | 0.039 |
| 0.20  | 0.93  | 1.03            | 1.03      | 0.072     | -0.012    | 0.066      | 0.066 | 0.045 | 0.040 |
| 0.10  | 0.93  | 1.03            | 1.03      | 0.100     | -0.015    | 0.060      | 0.060 | 0.050 | 0.034 |
| 0.00  | 0.93  | 1.00            | 1.00      | 0.102     | -0.015    | 0.069      | 0.069 | 0.045 | 0.033 |
| 0.10  | 0.93  | 1.00            | 0.99      | 0.108     | -0.010    | 0.052      | 0.053 | 0.042 | 0.029 |
| 0.20  | 0.93  | 1.01            | 1.00      | 0.110     | -0.001    | 0.056      | 0.057 | 0.043 | 0.029 |
| 0.30  | 0.93  | 1.00            | 0.99      | 0.105     | -0.011    | 0.053      | 0.053 | 0.039 | 0.027 |
| 0.40  | 0.93  | 0.98            | 0.97      | 0.107     | -0.003    | 0.051      | 0.052 | 0.040 | 0.025 |
| 0.50  | 0.93  | 0.95            | 0.95      | 0.101     | -0.001    | 0.060      | 0.060 | 0.043 | 0.027 |
| 0.55  | 0.93  | 0.95            | 0.95      | 0.103     | -0.005    | 0.061      | 0.061 | 0.042 | 0.027 |
| 0.60  | 0.93  | 0.97            | 0.96      | 0.099     | -0.004    | 0.057      | 0.057 | 0.048 | 0.027 |
| 0.65  | 0.93  | 0.92            | 0.92      | 0.106     | -0.007    | 0.053      | 0.058 | 0.040 | 0.027 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.70     | -0.93    | 0.52        | 0.91     | 0.099    | -0.020   | 0.057         | 0.058     | 0.044     | 0.033     |
| 0.30     | -0.93    | 0.09        | 0.88     | 0.090    | -0.024   | 0.057         | 0.058     | 0.050     | 0.036     |
| -0.30    | -0.93    | 1.05        | 1.05     | -0.054   | -0.017   | 0.094         | 0.094     | 0.064     | 0.047     |
| -0.75    | -0.75    | 1.03        | 1.03     | -0.031   | -0.008   | 0.085         | 0.085     | 0.063     | 0.047     |
| -0.70    | -0.75    | 1.03        | 1.03     | -0.011   | -0.017   | 0.076         | 0.076     | 0.068     | 0.040     |
| -0.65    | -0.75    | 1.03        | 1.03     | -0.006   | -0.013   | 0.079         | 0.080     | 0.070     | 0.041     |
| -0.60    | -0.75    | 1.02        | 1.02     | 0.001    | -0.014   | 0.080         | 0.080     | 0.062     | 0.039     |
| -0.55    | -0.75    | 1.03        | 1.02     | 0.020    | -0.010   | 0.076         | 0.076     | 0.063     | 0.041     |
| -0.50    | -0.75    | 1.01        | 1.01     | 0.014    | -0.011   | 0.079         | 0.079     | 0.071     | 0.041     |
| -0.40    | -0.75    | 1.02        | 1.01     | 0.045    | -0.009   | 0.074         | 0.074     | 0.061     | 0.042     |
| -0.30    | -0.75    | 0.99        | 0.99     | 0.053    | -0.008   | 0.073         | 0.073     | 0.066     | 0.038     |
| -0.20    | -0.75    | 0.99        | 0.99     | 0.087    | -0.013   | 0.076         | 0.076     | 0.062     | 0.040     |
| -0.10    | -0.75    | 0.97        | 0.97     | 0.067    | -0.016   | 0.064         | 0.064     | 0.055     | 0.036     |
| 0.00     | -0.75    | 0.97        | 0.96     | 0.082    | -0.010   | 0.071         | 0.071     | 0.053     | 0.037     |
| 0.10     | -0.75    | 0.95        | 0.95     | 0.083    | -0.005   | 0.070         | 0.071     | 0.056     | 0.038     |
| 0.20     | -0.75    | 0.94        | 0.94     | 0.085    | 0.004    | 0.077         | 0.078     | 0.059     | 0.031     |
| 0.30     | -0.75    | 0.92        | 0.92     | 0.091    | -0.012   | 0.065         | 0.065     | 0.053     | 0.031     |
| 0.40     | -0.75    | 0.93        | 0.92     | 0.089    | -0.017   | 0.071         | 0.072     | 0.056     | 0.028     |
| 0.50     | -0.75    | 0.97        | 0.91     | 0.089    | -0.008   | 0.070         | 0.070     | 0.044     | 0.030     |
| 0.60     | -0.75    | 0.91        | 0.91     | 0.089    | 0.000    | 0.067         | 0.064     | 0.048     | 0.020     |
| 0.70     | -0.75    | 0.90        | 0.89     | 0.091    | -0.017   | 0.064         | 0.064     | 0.050     | 0.031     |
| 0.30     | -0.75    | 0.87        | 0.86     | 0.092    | -0.024   | 0.059         | 0.059     | 0.049     | 0.022     |
| 0.70     | 0.00     | 0.99        | 0.99     | 0.054    | 0.010    | 0.044         | 0.044     | 0.040     | 0.077     |
| 0.60     | 0.00     | 1.01        | 1.01     | 0.068    | 0.013    | 0.027         | 0.027     | 0.025     | 0.015     |
| 0.50     | 0.00     | 1.02        | 1.02     | 0.080    | 0.013    | 0.021         | 0.021     | 0.023     | 0.012     |
| 0.40     | 0.00     | 1.04        | 1.03     | 0.091    | 0.013    | 0.027         | 0.027     | 0.023     | 0.011     |
| 0.30     | 0.00     | 1.05        | 1.04     | 0.103    | 0.013    | 0.022         | 0.022     | 0.017     | 0.010     |
| 0.20     | 0.00     | 1.05        | 1.05     | 0.114    | 0.011    | 0.024         | 0.024     | 0.023     | 0.012     |
| 0.10     | 0.00     | 1.07        | 1.06     | 0.123    | 0.011    | 0.023         | 0.023     | 0.024     | 0.012     |
| 0.00     | 0.00     | 1.08        | 1.07     | 0.134    | 0.014    | 0.023         | 0.023     | 0.027     | 0.011     |
| -0.10    | 0.00     | 1.09        | 1.08     | 0.140    | 0.017    | 0.022         | 0.022     | 0.025     | 0.011     |
| -0.20    | 0.00     | 1.10        | 1.09     | 0.154    | 0.014    | 0.023         | 0.023     | 0.021     | 0.010     |
| -0.30    | 0.00     | 1.10        | 1.09     | 0.166    | 0.015    | 0.024         | 0.024     | 0.024     | 0.011     |
| -0.40    | 0.00     | 1.12        | 1.11     | 0.188    | 0.015    | 0.028         | 0.028     | 0.031     | 0.017     |
| -0.50    | 0.00     | 1.13        | 1.11     | 0.213    | 0.021    | 0.025         | 0.026     | 0.027     | 0.012     |
| -0.55    | 0.00     | 1.14        | 1.12     | 0.226    | 0.022    | 0.024         | 0.025     | 0.037     | 0.011     |
| -0.60    | 0.00     | 1.12        | 1.09     | 0.235    | 0.018    | 0.037         | 0.037     | 0.073     | 0.020     |
| -0.65    | 0.00     | 0.77        | 0.77     | 0.223    | 0.001    | 0.055         | 0.057     | 0.029     | 0.077     |
| -0.70    | 0.00     | 0.84        | 0.82     | 0.181    | -0.012   | 0.063         | 0.065     | 0.043     | 0.048     |
| -0.75    | 0.00     | 0.73        | 0.71     | 0.173    | -0.027   | 0.060         | 0.060     | 0.042     | 0.053     |
| -0.80    | 0.00     | 0.67        | 0.61     | 0.087    | -0.022   | 0.059         | 0.059     | 0.038     | 0.013     |
| -0.80    | 0.10     | 0.63        | 0.61     | 0.164    | -0.070   | 0.092         | 0.092     | 0.068     | 0.060     |
| -0.75    | 0.10     | 0.70        | 0.67     | 0.152    | -0.067   | 0.074         | 0.076     | 0.063     | 0.068     |
| -0.70    | 0.10     | 0.76        | 0.74     | 0.175    | -0.050   | 0.072         | 0.076     | 0.053     | 0.062     |
| -0.65    | 0.10     | 0.89        | 0.87     | 0.206    | 0.000    | 0.077         | 0.078     | 0.049     | 0.058     |
| -0.60    | 0.10     | 1.07        | 1.04     | 0.235    | 0.038    | 0.045         | 0.047     | 0.071     | 0.032     |
| -0.55    | 0.10     | 1.14        | 1.11     | 0.221    | 0.057    | 0.029         | 0.029     | 0.036     | 0.015     |
| -0.50    | 0.10     | 1.13        | 1.11     | 0.205    | 0.055    | 0.027         | 0.023     | 0.027     | 0.011     |
| -0.40    | 0.10     | 1.12        | 1.11     | 0.181    | 0.040    | 0.025         | 0.026     | 0.021     | 0.011     |
| -0.30    | 0.10     | 1.11        | 1.09     | 0.164    | 0.032    | 0.022         | 0.022     | 0.024     | 0.011     |
| -0.20    | 0.10     | 1.05        | 1.00     | 0.150    | 0.021    | 0.024         | 0.024     | 0.020     | 0.010     |
| -0.10    | 0.10     | 1.08        | 1.07     | 0.140    | 0.018    | 0.023         | 0.023     | 0.022     | 0.010     |
| 0.00     | 0.10     | 1.07        | 1.06     | 0.130    | 0.016    | 0.025         | 0.025     | 0.023     | 0.005     |
| 0.10     | 0.10     | 1.07        | 1.07     | 0.121    | 0.018    | 0.023         | 0.023     | 0.023     | 0.011     |
| 0.20     | 0.10     | 1.05        | 1.05     | 0.115    | 0.014    | 0.024         | 0.024     | 0.023     | 0.012     |
| 0.30     | 0.10     | 1.05        | 1.04     | 0.101    | 0.013    | 0.024         | 0.024     | 0.022     | 0.012     |
| 0.40     | 0.10     | 1.03        | 1.03     | 0.096    | 0.016    | 0.022         | 0.022     | 0.025     | 0.011     |
| 0.50     | 0.10     | 1.02        | 1.01     | 0.081    | 0.017    | 0.022         | 0.022     | 0.025     | 0.013     |
| 0.60     | 0.10     | 1.01        | 1.00     | 0.074    | 0.019    | 0.022         | 0.022     | 0.025     | 0.016     |
| 0.70     | 0.10     | 0.99        | 0.99     | 0.066    | 0.017    | 0.031         | 0.031     | 0.038     | 0.027     |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| 0.80  | 0.10 | 0.76            | 0.96      | 0.067     | 0.007     | 0.047            | 0.047 | 0.068 | 0.035 |
| 0.80  | 0.20 | 0.77            | 0.96      | 0.058     | 0.008     | 0.044            | 0.044 | 0.043 | 0.034 |
| 0.70  | 0.20 | 1.00            | 1.00      | 0.066     | 0.017     | 0.027            | 0.027 | 0.032 | 0.019 |
| 0.60  | 0.20 | 1.01            | 1.01      | 0.077     | 0.018     | 0.024            | 0.025 | 0.030 | 0.014 |
| 0.50  | 0.20 | 1.07            | 1.02      | 0.084     | 0.018     | 0.022            | 0.023 | 0.023 | 0.012 |
| 0.40  | 0.20 | 1.04            | 1.03      | 0.092     | 0.018     | 0.022            | 0.022 | 0.024 | 0.011 |
| 0.30  | 0.20 | 1.05            | 1.04      | 0.104     | 0.020     | 0.022            | 0.022 | 0.019 | 0.011 |
| 0.20  | 0.20 | 1.05            | 1.05      | 0.114     | 0.020     | 0.026            | 0.026 | 0.024 | 0.010 |
| 0.10  | 0.10 | 1.06            | 1.05      | 0.119     | 0.020     | 0.021            | 0.021 | 0.021 | 0.010 |
| 0.00  | 0.10 | 1.07            | 1.06      | 0.129     | 0.022     | 0.022            | 0.022 | 0.023 | 0.012 |
| -0.10 | 0.10 | 1.08            | 1.07      | 0.137     | 0.027     | 0.025            | 0.024 | 0.024 | 0.011 |
| -0.20 | 0.10 | 1.10            | 1.07      | 0.147     | 0.033     | 0.015            | 0.025 | 0.021 | 0.012 |
| -0.30 | 0.10 | 1.11            | 1.10      | 0.154     | 0.043     | 0.075            | 0.025 | 0.025 | 0.011 |
| -0.40 | 0.10 | 1.12            | 1.11      | 0.167     | 0.063     | 0.025            | 0.025 | 0.024 | 0.012 |
| -0.50 | 0.10 | 1.14            | 1.12      | 0.188     | 0.094     | 0.024            | 0.025 | 0.023 | 0.011 |
| -0.55 | 0.20 | 1.13            | 1.10      | 0.205     | 0.105     | 0.040            | 0.041 | 0.029 | 0.027 |
| -0.60 | 0.20 | 0.92            | 0.89      | 0.194     | 0.078     | 0.102            | 0.106 | 0.045 | 0.056 |
| -0.65 | 0.20 | 0.77            | 0.74      | 0.179     | 0.073     | 0.072            | 0.073 | 0.065 | 0.055 |
| -0.70 | 0.20 | 0.81            | 0.78      | 0.213     | 0.007     | 0.068            | 0.071 | 0.069 | 0.059 |
| -0.75 | 0.20 | 0.84            | 0.79      | 0.251     | -0.075    | 0.085            | 0.084 | 0.072 | 0.062 |
| -0.80 | 0.20 | 0.76            | 0.70      | 0.249     | -0.111    | 0.110            | 0.117 | 0.067 | 0.076 |
| -0.80 | 0.30 | 0.90            | 0.88      | 0.165     | -0.107    | 0.066            | 0.067 | 0.052 | 0.052 |
| -0.75 | 0.30 | 0.88            | 0.87      | 0.154     | -0.074    | 0.059            | 0.060 | 0.054 | 0.057 |
| -0.70 | 0.30 | 0.85            | 0.84      | 0.118     | 0.057     | 0.057            | 0.058 | 0.060 | 0.053 |
| -0.65 | 0.30 | 0.79            | 0.77      | 0.099     | 0.126     | 0.062            | 0.062 | 0.059 | 0.051 |
| 0.60  | 0.30 | 0.71            | 0.69      | 0.134     | 0.126     | 0.078            | 0.100 | 0.054 | 0.058 |
| 0.55  | 0.30 | 1.12            | 1.10      | 0.155     | 0.132     | 0.040            | 0.048 | 0.029 | 0.028 |
| 0.50  | 0.30 | 1.14            | 1.12      | 0.150     | 0.114     | 0.024            | 0.024 | 0.020 | 0.014 |
| 0.45  | 0.30 | 1.14            | 1.13      | 0.147     | 0.073     | 0.024            | 0.024 | 0.016 | 0.015 |
| 0.30  | 0.30 | 1.12            | 1.11      | 0.138     | 0.053     | 0.021            | 0.021 | 0.018 | 0.011 |
| 0.20  | 0.30 | 1.10            | 1.09      | 0.129     | 0.043     | 0.021            | 0.021 | 0.019 | 0.012 |
| 0.10  | 0.30 | 1.10            | 1.08      | 0.129     | 0.035     | 0.021            | 0.021 | 0.017 | 0.011 |
| 0.00  | 0.30 | 1.00            | 1.07      | 0.124     | 0.028     | 0.027            | 0.022 | 0.019 | 0.011 |
| 0.10  | 0.20 | 1.07            | 1.06      | 0.114     | 0.026     | 0.020            | 0.020 | 0.019 | 0.010 |
| 0.20  | 0.20 | 1.06            | 1.05      | 0.107     | 0.022     | 0.021            | 0.027 | 0.018 | 0.012 |
| 0.70  | 0.20 | 1.04            | 1.04      | 0.100     | 0.020     | 0.021            | 0.021 | 0.011 | 0.014 |
| 0.40  | 0.20 | 1.03            | 1.03      | 0.093     | 0.021     | 0.020            | 0.019 | 0.021 | 0.011 |
| 0.50  | 0.20 | 1.03            | 1.02      | 0.082     | 0.023     | 0.020            | 0.020 | 0.018 | 0.012 |
| 0.60  | 0.20 | 1.02            | 1.01      | 0.069     | 0.019     | 0.021            | 0.021 | 0.021 | 0.015 |
| 0.70  | 0.20 | 1.00            | 1.00      | 0.061     | 0.014     | 0.015            | 0.025 | 0.030 | 0.014 |
| 0.80  | 0.20 | 0.97            | 0.96      | 0.077     | 0.007     | 0.054            | 0.054 | 0.054 | 0.038 |
| 0.80  | 0.40 | 0.95            | 0.95      | 0.042     | 0.007     | 0.049            | 0.047 | 0.045 | 0.035 |
| 0.70  | 0.40 | 0.99            | 0.99      | 0.062     | 0.015     | 0.026            | 0.026 | 0.025 | 0.024 |
| 0.60  | 0.40 | 1.01            | 1.01      | 0.067     | 0.024     | 0.023            | 0.023 | 0.018 | 0.012 |
| 0.50  | 0.40 | 1.02            | 1.02      | 0.074     | 0.027     | 0.024            | 0.024 | 0.026 | 0.017 |
| 0.40  | 0.40 | 1.04            | 1.03      | 0.087     | 0.026     | 0.019            | 0.019 | 0.021 | 0.011 |
| 0.30  | 0.40 | 1.04            | 1.04      | 0.097     | 0.022     | 0.021            | 0.021 | 0.021 | 0.015 |
| 0.20  | 0.40 | 1.05            | 1.04      | 0.106     | 0.026     | 0.023            | 0.023 | 0.020 | 0.014 |
| 0.10  | 0.40 | 1.07            | 1.06      | 0.112     | 0.029     | 0.019            | 0.019 | 0.019 | 0.011 |
| 0.00  | 0.40 | 1.08            | 1.07      | 0.113     | 0.032     | 0.019            | 0.017 | 0.017 | 0.012 |
| -0.10 | 0.40 | 1.09            | 1.07      | 0.121     | 0.027     | 0.023            | 0.023 | 0.017 | 0.011 |
| -0.20 | 0.40 | 1.10            | 1.09      | 0.123     | 0.045     | 0.022            | 0.022 | 0.017 | 0.012 |
| -0.30 | 0.40 | 1.12            | 1.11      | 0.123     | 0.056     | 0.021            | 0.021 | 0.014 | 0.011 |
| -0.40 | 0.40 | 1.13            | 1.12      | 0.121     | 0.074     | 0.021            | 0.021 | 0.014 | 0.012 |
| -0.50 | 0.40 | 1.13            | 1.12      | 0.113     | 0.108     | 0.022            | 0.022 | 0.016 | 0.011 |
| -0.55 | 0.40 | 1.15            | 1.13      | 0.106     | 0.125     | 0.028            | 0.028 | 0.019 | 0.016 |
| -0.60 | 0.40 | 1.12            | 1.10      | 0.085     | 0.127     | 0.069            | 0.069 | 0.034 | 0.042 |
| -0.65 | 0.40 | 0.77            | 0.76      | 0.042     | 0.118     | 0.104            | 0.105 | 0.051 | 0.057 |
| -0.70 | 0.40 | 0.85            | 0.84      | -0.001    | 0.103     | 0.065            | 0.066 | 0.048 | 0.061 |
| -0.75 | 0.40 | 0.85            | 0.85      | -0.014    | 0.026     | 0.054            | 0.054 | 0.049 | 0.057 |

ORIGINAL PAGE IS  
OF POOR QUALITY

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------------|-------|-------|-------|
| -0.80 | 0.40 | 0.84            | 0.83      | 0.013     | -0.089    | 0.056            | 0.056 | 0.056 | 0.049 |
| -0.80 | 0.50 | 0.89            | 0.88      | 0.011     | -0.013    | 0.064            | 0.064 | 0.054 | 0.052 |
| -0.75 | 0.50 | 0.92            | 0.92      | 0.010     | 0.031     | 0.073            | 0.073 | 0.046 | 0.056 |
| -0.70 | 0.50 | 0.77            | 0.78      | 0.025     | 0.054     | 0.072            | 0.072 | 0.043 | 0.050 |
| -0.65 | 0.50 | 1.09            | 1.08      | 0.048     | 0.081     | 0.064            | 0.065 | 0.026 | 0.042 |
| -0.60 | 0.50 | 1.16            | 1.15      | 0.068     | 0.101     | 0.030            | 0.030 | 0.020 | 0.019 |
| -0.55 | 0.50 | 1.15            | 1.14      | 0.082     | 0.098     | 0.023            | 0.023 | 0.016 | 0.012 |
| -0.50 | 0.50 | 1.14            | 1.13      | 0.092     | 0.091     | 0.022            | 0.022 | 0.014 | 0.011 |
| -0.40 | 0.50 | 1.12            | 1.12      | 0.104     | 0.068     | 0.022            | 0.022 | 0.015 | 0.011 |
| -0.30 | 0.50 | 1.11            | 1.10      | 0.110     | 0.056     | 0.020            | 0.020 | 0.015 | 0.011 |
| -0.20 | 0.50 | 1.09            | 1.09      | 0.114     | 0.041     | 0.022            | 0.022 | 0.017 | 0.012 |
| -0.10 | 0.50 | 1.08            | 1.07      | 0.115     | 0.036     | 0.021            | 0.021 | 0.016 | 0.012 |
| 0.00  | 0.50 | 1.07            | 1.07      | 0.117     | 0.025     | 0.021            | 0.021 | 0.019 | 0.013 |
| 0.10  | 0.50 | 1.06            | 1.05      | 0.114     | 0.029     | 0.020            | 0.029 | 0.021 | 0.013 |
| 0.20  | 0.50 | 1.05            | 1.04      | 0.106     | 0.032     | 0.023            | 0.024 | 0.023 | 0.013 |
| 0.30  | 0.50 | 1.04            | 1.03      | 0.096     | 0.028     | 0.020            | 0.020 | 0.020 | 0.014 |
| 0.40  | 0.50 | 1.02            | 1.02      | 0.089     | 0.022     | 0.031            | 0.031 | 0.025 | 0.013 |
| 0.50  | 0.50 | 1.01            | 1.00      | 0.075     | 0.021     | 0.031            | 0.031 | 0.023 | 0.016 |
| 0.60  | 0.50 | 0.97            | 0.96      | 0.067     | 0.015     | 0.035            | 0.035 | 0.029 | 0.020 |
| 0.70  | 0.50 | 0.94            | 0.93      | 0.057     | 0.016     | 0.027            | 0.027 | 0.037 | 0.023 |
| 0.80  | 0.50 | 0.92            | 0.92      | 0.050     | 0.000     | 0.045            | 0.045 | 0.046 | 0.031 |
| 0.80  | 0.60 | 0.94            | 0.93      | 0.048     | 0.018     | 0.035            | 0.035 | 0.046 | 0.032 |
| 0.70  | 0.60 | 0.95            | 0.95      | 0.056     | 0.019     | 0.028            | 0.028 | 0.039 | 0.024 |
| 0.60  | 0.60 | 0.97            | 0.97      | 0.069     | 0.021     | 0.023            | 0.023 | 0.027 | 0.017 |
| 0.50  | 0.60 | 0.97            | 0.97      | 0.077     | 0.022     | 0.024            | 0.024 | 0.020 | 0.016 |
| 0.40  | 0.60 | 0.97            | 0.96      | 0.085     | 0.024     | 0.026            | 0.027 | 0.025 | 0.018 |
| 0.30  | 0.60 | 1.00            | 0.99      | 0.094     | 0.026     | 0.030            | 0.038 | 0.023 | 0.017 |
| 0.20  | 0.60 | 1.03            | 1.02      | 0.103     | 0.037     | 0.030            | 0.030 | 0.020 | 0.014 |
| 0.10  | 0.60 | 1.06            | 1.05      | 0.117     | 0.032     | 0.028            | 0.027 | 0.022 | 0.015 |
| 0.00  | 0.60 | 1.05            | 1.06      | 0.120     | 0.019     | 0.022            | 0.022 | 0.023 | 0.014 |
| -0.10 | 0.60 | 1.07            | 1.07      | 0.116     | 0.030     | 0.025            | 0.025 | 0.027 | 0.017 |
| -0.20 | 0.60 | 1.10            | 1.10      | 0.107     | 0.040     | 0.022            | 0.022 | 0.017 | 0.013 |
| -0.30 | 0.60 | 1.11            | 1.11      | 0.100     | 0.049     | 0.022            | 0.022 | 0.019 | 0.013 |
| -0.40 | 0.60 | 1.12            | 1.12      | 0.091     | 0.060     | 0.021            | 0.022 | 0.015 | 0.011 |
| -0.50 | 0.60 | 1.14            | 1.13      | 0.079     | 0.074     | 0.021            | 0.021 | 0.016 | 0.011 |
| -0.55 | 0.60 | 1.15            | 1.15      | 0.074     | 0.082     | 0.022            | 0.022 | 0.016 | 0.013 |
| -0.60 | 0.60 | 1.16            | 1.15      | 0.062     | 0.081     | 0.024            | 0.024 | 0.017 | 0.014 |
| -0.65 | 0.60 | 1.12            | 1.11      | 0.052     | 0.069     | 0.043            | 0.043 | 0.020 | 0.025 |
| 0.70  | 0.60 | 1.04            | 1.04      | 0.043     | 0.048     | 0.058            | 0.058 | 0.028 | 0.037 |
| -0.75 | 0.60 | 0.98            | 0.95      | 0.028     | 0.017     | 0.059            | 0.059 | 0.036 | 0.044 |
| -0.80 | 0.60 | 0.94            | 0.94      | 0.019     | -0.015    | 0.056            | 0.056 | 0.050 | 0.052 |
| -0.80 | 0.70 | 1.02            | 1.01      | 0.020     | 0.007     | 0.045            | 0.045 | 0.039 | 0.041 |
| -0.75 | 0.70 | 1.03            | 1.03      | 0.029     | 0.025     | 0.047            | 0.048 | 0.031 | 0.031 |
| -0.70 | 0.70 | 1.09            | 1.08      | 0.037     | 0.043     | 0.047            | 0.047 | 0.023 | 0.025 |
| -0.65 | 0.70 | 1.14            | 1.14      | 0.043     | 0.059     | 0.034            | 0.034 | 0.021 | 0.023 |
| -0.60 | 0.70 | 1.16            | 1.15      | 0.054     | 0.069     | 0.023            | 0.024 | 0.016 | 0.014 |
| -0.55 | 0.70 | 1.15            | 1.15      | 0.067     | 0.063     | 0.021            | 0.021 | 0.016 | 0.016 |
| -0.50 | 0.70 | 1.14            | 1.13      | 0.069     | 0.058     | 0.023            | 0.023 | 0.015 | 0.012 |
| -0.40 | 0.70 | 1.12            | 1.12      | 0.083     | 0.048     | 0.022            | 0.022 | 0.015 | 0.013 |
| -0.30 | 0.70 | 1.11            | 1.10      | 0.092     | 0.041     | 0.021            | 0.021 | 0.018 | 0.014 |
| -0.20 | 0.70 | 1.09            | 1.07      | 0.098     | 0.036     | 0.021            | 0.021 | 0.018 | 0.011 |
| -0.10 | 0.70 | 1.07            | 1.06      | 0.106     | 0.021     | 0.029            | 0.030 | 0.021 | 0.013 |
| 0.00  | 0.70 | 1.07            | 1.01      | 0.102     | 0.013     | 0.030            | 0.030 | 0.024 | 0.016 |
| 0.10  | 0.70 | 0.99            | 0.98      | 0.098     | 0.013     | 0.025            | 0.025 | 0.025 | 0.017 |
| 0.20  | 0.70 | 0.98            | 0.97      | 0.095     | 0.035     | 0.022            | 0.022 | 0.024 | 0.015 |
| 0.30  | 0.70 | 0.98            | 0.98      | 0.090     | 0.034     | 0.025            | 0.025 | 0.022 | 0.013 |
| 0.40  | 0.70 | 0.98            | 0.97      | 0.083     | 0.029     | 0.023            | 0.023 | 0.021 | 0.013 |
| 0.50  | 0.70 | 0.97            | 0.97      | 0.075     | 0.024     | 0.026            | 0.026 | 0.025 | 0.014 |
| 0.60  | 0.70 | 0.96            | 0.95      | 0.068     | 0.021     | 0.027            | 0.024 | 0.027 | 0.018 |
| 0.70  | 0.70 | 0.91            | 0.91      | 0.058     | 0.018     | 0.031            | 0.031 | 0.030 | 0.025 |

| $y$   | $z$   | $\bar{U}$ rms | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $\bar{U}'$ rms | $u'$  | $v'$  | $w'$  |
|-------|-------|---------------|-----------|-----------|-----------|----------------|-------|-------|-------|
| 0.80  | 0.70  | 0.89          | 0.89      | 0.043     | 0.017     | 0.040          | 0.040 | 0.043 | 0.030 |
| 0.80  | 0.80  | 0.88          | 0.88      | 0.042     | 0.023     | 0.045          | 0.046 | 0.049 | 0.036 |
| 0.70  | 0.80  | 0.91          | 0.91      | 0.048     | 0.020     | 0.030          | 0.030 | 0.041 | 0.028 |
| 0.60  | 0.80  | 0.93          | 0.93      | 0.063     | 0.017     | 0.025          | 0.025 | 0.029 | 0.027 |
| 0.50  | 0.80  | 0.94          | 0.93      | 0.071     | 0.019     | 0.021          | 0.021 | 0.025 | 0.022 |
| 0.40  | 0.30  | 0.94          | 0.94      | 0.076     | 0.023     | 0.022          | 0.022 | 0.020 | 0.019 |
| 0.30  | 0.80  | 0.95          | 0.95      | 0.075     | 0.029     | 0.022          | 0.022 | 0.020 | 0.015 |
| 0.20  | 0.80  | 0.96          | 0.95      | 0.070     | 0.031     | 0.023          | 0.024 | 0.020 | 0.017 |
| 0.10  | 0.80  | 0.96          | 0.96      | 0.064     | 0.021     | 0.026          | 0.026 | 0.024 | 0.021 |
| 0.00  | 0.80  | 0.97          | 0.96      | 0.070     | 0.013     | 0.027          | 0.027 | 0.027 | 0.022 |
| -0.10 | 0.80  | 0.98          | 0.98      | 0.081     | 0.015     | 0.028          | 0.028 | 0.030 | 0.021 |
| -0.20 | 0.80  | 1.00          | 0.99      | 0.083     | 0.024     | 0.022          | 0.022 | 0.025 | 0.023 |
| -0.30 | 0.80  | 1.01          | 1.01      | 0.081     | 0.027     | 0.025          | 0.026 | 0.022 | 0.024 |
| -0.40 | 0.80  | 1.07          | 1.09      | 0.072     | 0.033     | 0.032          | 0.032 | 0.024 | 0.029 |
| -0.50 | 0.80  | 1.10          | 1.10      | 0.061     | 0.039     | 0.029          | 0.029 | 0.022 | 0.031 |
| -0.55 | 0.80  | 1.10          | 1.10      | 0.051     | 0.040     | 0.029          | 0.027 | 0.022 | 0.029 |
| -0.60 | 0.80  | 1.12          | 1.11      | 0.042     | 0.046     | 0.028          | 0.028 | 0.021 | 0.028 |
| -0.65 | 0.80  | 1.11          | 1.10      | 0.031     | 0.037     | 0.036          | 0.036 | 0.025 | 0.032 |
| -0.70 | 0.80  | 1.07          | 1.07      | 0.018     | 0.028     | 0.040          | 0.040 | 0.026 | 0.035 |
| -0.75 | 0.80  | 1.05          | 1.05      | 0.007     | 0.013     | 0.043          | 0.043 | 0.034 | 0.033 |
| -0.80 | 0.80  | 1.06          | 1.06      | 0.000     | -0.016    | 0.047          | 0.047 | 0.039 | 0.041 |
| -0.85 | 0.80  | 1.12          | 1.12      | -0.015    | -0.067    | 0.056          | 0.056 | 0.042 | 0.057 |
| -0.85 | 0.70  | 1.07          | 1.06      | 0.021     | -0.079    | 0.059          | 0.059 | 0.047 | 0.061 |
| -0.85 | 0.60  | 1.01          | 1.00      | 0.028     | -0.079    | 0.069          | 0.068 | 0.051 | 0.068 |
| -0.85 | 0.50  | 0.95          | 0.94      | 0.035     | -0.096    | 0.077          | 0.076 | 0.064 | 0.071 |
| -0.85 | 0.40  | 0.90          | 0.88      | 0.050     | -0.142    | 0.067          | 0.067 | 0.066 | 0.061 |
| -0.85 | 0.30  | 0.94          | 0.90      | 0.171     | -0.176    | 0.083          | 0.084 | 0.056 | 0.050 |
| -0.85 | 0.20  | 0.66          | 0.61      | 0.198     | -0.110    | 0.135          | 0.130 | 0.070 | 0.053 |
| -0.85 | 0.10  | 0.59          | 0.58      | 0.065     | -0.076    | 0.067          | 0.067 | 0.051 | 0.067 |
| -0.85 | 0.00  | 0.55          | 0.54      | 0.055     | -0.020    | 0.053          | 0.054 | 0.033 | 0.047 |
| -0.85 | -0.10 | 0.57          | 0.57      | 0.056     | 0.029     | 0.064          | 0.064 | 0.030 | 0.042 |
| -0.85 | -0.20 | 0.52          | 0.50      | 0.075     | 0.064     | 0.071          | 0.065 | 0.047 | 0.073 |
| -0.85 | -0.30 | 0.72          | 0.69      | 0.162     | 0.077     | 0.124          | 0.129 | 0.072 | 0.098 |
| -0.85 | -0.40 | 0.93          | 0.91      | 0.144     | 0.123     | 0.076          | 0.076 | 0.062 | 0.053 |
| -0.85 | -0.50 | 0.97          | 0.91      | 0.046     | 0.060     | 0.070          | 0.070 | 0.055 | 0.056 |
| -0.85 | -0.60 | 0.98          | 0.98      | 0.073     | 0.037     | 0.067          | 0.067 | 0.050 | 0.053 |
| -0.85 | -0.70 | 1.07          | 1.06      | 0.023     | 0.031     | 0.054          | 0.054 | 0.045 | 0.051 |
| -0.85 | -0.80 | 1.12          | 1.11      | 0.011     | 0.028     | 0.061          | 0.062 | 0.038 | 0.046 |
| 0.90  | 0.80  | 1.09          | 1.08      | -0.007    | -0.162    | 0.082          | 0.084 | 0.052 | 0.055 |
| -0.70 | 0.70  | 1.05          | 1.03      | 0.076     | -0.199    | 0.000          | 0.000 | 0.045 | 0.070 |
| -0.90 | 0.60  | 1.05          | 1.03      | 0.000     | -0.175    | 0.074          | 0.075 | 0.053 | 0.070 |
| -0.90 | 0.50  | 1.01          | 0.98      | 0.044     | -0.227    | 0.082          | 0.087 | 0.057 | 0.068 |
| -0.90 | 0.40  | 0.97          | 0.94      | 0.060     | -0.217    | 0.083          | 0.084 | 0.058 | 0.071 |
| -0.90 | 0.30  | 0.89          | 0.84      | 0.156     | -0.227    | 0.103          | 0.105 | 0.062 | 0.079 |
| -0.90 | 0.20  | 0.48          | 0.44      | 0.130     | -0.081    | 0.114          | 0.113 | 0.070 | 0.093 |
| -0.90 | 0.10  | 0.55          | 0.55      | 0.041     | -0.010    | 0.055          | 0.055 | 0.041 | 0.042 |
| -0.90 | 0.00  | 0.45          | 0.45      | 0.027     | -0.024    | 0.067          | 0.066 | 0.041 | 0.049 |
| -0.90 | -0.10 | 0.43          | 0.43      | 0.026     | 0.005     | 0.080          | 0.081 | 0.034 | 0.048 |
| -0.90 | -0.20 | 0.48          | 0.47      | 0.034     | 0.011     | 0.077          | 0.080 | 0.039 | 0.051 |
| -0.90 | -0.30 | 0.54          | 0.50      | 0.116     | 0.077     | 0.147          | 0.151 | 0.075 | 0.111 |
| -0.90 | -0.40 | 0.87          | 0.84      | 0.147     | 0.163     | 0.089          | 0.091 | 0.059 | 0.064 |
| -0.90 | -0.50 | 0.95          | 0.93      | 0.072     | 0.147     | 0.094          | 0.093 | 0.055 | 0.063 |
| -0.90 | -0.60 | 1.01          | 1.00      | 0.044     | 0.125     | 0.087          | 0.087 | 0.055 | 0.063 |
| -0.90 | -0.70 | 1.06          | 1.05      | 0.039     | 0.116     | 0.080          | 0.083 | 0.054 | 0.064 |
| -0.90 | -0.80 | 1.06          | 1.05      | 0.005     | 0.124     | 0.087          | 0.088 | 0.059 | 0.050 |
| -0.93 | 0.80  | 1.04          | 1.02      | -0.013    | -0.211    | 0.076          | 0.079 | 0.054 | 0.057 |
| -0.93 | 0.70  | 1.04          | 1.01      | 0.020     | -0.231    | 0.071          | 0.070 | 0.055 | 0.068 |
| -0.93 | 0.60  | 1.01          | 0.98      | 0.032     | -0.227    | 0.094          | 0.097 | 0.053 | 0.073 |
| -0.93 | 0.50  | 0.98          | 0.95      | 0.046     | -0.221    | 0.083          | 0.086 | 0.054 | 0.072 |
| -0.93 | 0.40  | 0.95          | 0.91      | 0.070     | -0.236    | 0.082          | 0.082 | 0.058 | 0.064 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U' rms</u> | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| -0.93    | 0.30     | 0.79        | 0.75     | 0.144    | -0.193   | 0.104         | 0.105     | 0.056     | 0.081     |
| -0.93    | 0.20     | 0.39        | 0.36     | 0.083    | -0.045   | 0.095         | 0.094     | 0.059     | 0.090     |
| -0.93    | 0.10     | 0.54        | 0.53     | 0.029    | 0.000    | 0.061         | 0.062     | 0.041     | 0.047     |
| -0.93    | 0.00     | 0.37        | 0.36     | 0.011    | -0.021   | 0.064         | 0.065     | 0.043     | 0.059     |
| -0.93    | -0.10    | 0.36        | 0.35     | 0.011    | -0.004   | 0.082         | 0.083     | 0.039     | 0.055     |
| -0.93    | -0.20    | 0.45        | 0.44     | 0.037    | -0.014   | 0.076         | 0.080     | 0.047     | 0.056     |
| -0.93    | -0.30    | 0.42        | 0.39     | 0.075    | 0.065    | 0.139         | 0.146     | 0.063     | 0.106     |
| -0.93    | -0.40    | 0.77        | 0.73     | 0.126    | 0.130    | 0.194         | 0.230     | 0.056     | 0.077     |
| -0.93    | -0.50    | 0.93        | 0.91     | 0.056    | 0.166    | 0.088         | 0.089     | 0.056     | 0.073     |
| -0.93    | -0.60    | 0.78        | 0.77     | 0.032    | 0.132    | 0.082         | 0.083     | 0.052     | 0.078     |
| -0.93    | -0.70    | 1.07        | 1.06     | 0.031    | 0.094    | 0.082         | 0.084     | 0.050     | 0.069     |
| -0.93    | -0.80    | 1.11        | 1.10     | -0.001   | 0.097    | 0.082         | 0.083     | 0.059     | 0.056     |
| -0.95    | 0.80     | 1.06        | 1.04     | 0.005    | -0.186   | 0.077         | 0.080     | 0.058     | 0.058     |
| -0.95    | 0.70     | 1.03        | 1.01     | 0.028    | -0.188   | 0.079         | 0.082     | 0.046     | 0.072     |
| -0.95    | 0.60     | 1.02        | 1.00     | 0.030    | -0.196   | 0.086         | 0.085     | 0.050     | 0.084     |
| -0.95    | 0.50     | 0.98        | 0.95     | 0.032    | -0.212   | 0.091         | 0.091     | 0.055     | 0.081     |
| -0.95    | 0.40     | 0.94        | 0.91     | 0.064    | -0.216   | 0.089         | 0.091     | 0.052     | 0.072     |
| -0.95    | 0.30     | 0.82        | 0.79     | 0.095    | -0.194   | 0.093         | 0.093     | 0.057     | 0.073     |
| -0.95    | 0.20     | 0.40        | 0.38     | 0.040    | -0.056   | 0.113         | 0.112     | 0.053     | 0.091     |
| -0.95    | 0.10     | 0.57        | 0.56     | 0.014    | -0.017   | 0.053         | 0.054     | 0.048     | 0.043     |
| -0.95    | 0.00     | 0.34        | 0.33     | 0.007    | -0.008   | 0.087         | 0.089     | 0.051     | 0.056     |
| -0.95    | -0.10    | 0.42        | 0.41     | -0.004   | 0.004    | 0.072         | 0.074     | 0.042     | 0.049     |
| -0.95    | -0.20    | 0.45        | 0.45     | 0.002    | -0.010   | 0.066         | 0.067     | 0.046     | 0.049     |
| -0.95    | -0.30    | 0.47        | 0.45     | 0.033    | 0.072    | 0.150         | 0.154     | 0.052     | 0.107     |
| -0.95    | -0.40    | 0.87        | 0.81     | 0.086    | 0.164    | 0.108         | 0.108     | 0.050     | 0.084     |
| -0.95    | -0.50    | 0.75        | 0.71     | 0.050    | 0.157    | 0.078         | 0.080     | 0.045     | 0.074     |
| -0.95    | -0.60    | 1.03        | 1.02     | 0.035    | 0.052    | 0.076         | 0.075     | 0.042     | 0.077     |
| -0.95    | -0.70    | 1.12        | 1.12     | 0.036    | 0.028    | 0.057         | 0.057     | 0.039     | 0.052     |
| -0.95    | -0.80    | 1.17        | 1.17     | 0.011    | 0.046    | 0.077         | 0.077     | 0.061     | 0.050     |

Table D-6, Station 11, X(H) = 1.0 Exit

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $U'$  | $V'$  | $W'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| 0.00     | 0.00     | 1.04            | 1.04      | 0.031     | -0.007    | 0.047      | 0.047 | 0.036 | 0.030 |
| 0.70     | 0.00     | 1.06            | 1.06      | 0.037     | -0.002    | 0.039      | 0.039 | 0.027 | 0.024 |
| 0.60     | 0.00     | 1.07            | 1.07      | 0.039     | 0.000     | 0.035      | 0.035 | 0.024 | 0.022 |
| 0.50     | 0.00     | 1.07            | 1.07      | 0.048     | -0.001    | 0.033      | 0.033 | 0.022 | 0.018 |
| 0.40     | 0.00     | 1.08            | 1.08      | 0.045     | 0.002     | 0.035      | 0.035 | 0.019 | 0.018 |
| 0.30     | 0.00     | 1.08            | 1.08      | 0.046     | 0.004     | 0.027      | 0.027 | 0.019 | 0.013 |
| 0.20     | 0.00     | 1.08            | 1.08      | 0.033     | 0.002     | 0.030      | 0.030 | 0.020 | 0.016 |
| 0.10     | 0.00     | 1.08            | 1.07      | 0.056     | 0.003     | 0.029      | 0.029 | 0.018 | 0.016 |
| 0.00     | 0.00     | 1.09            | 1.09      | 0.061     | 0.004     | 0.023      | 0.028 | 0.018 | 0.016 |
| -0.10    | 0.00     | 1.09            | 1.09      | 0.070     | 0.009     | 0.029      | 0.029 | 0.019 | 0.015 |
| -0.20    | 0.00     | 1.09            | 1.09      | 0.083     | 0.012     | 0.031      | 0.031 | 0.024 | 0.016 |
| -0.30    | 0.00     | 1.04            | 1.03      | 0.103     | 0.012     | 0.062      | 0.062 | 0.035 | 0.037 |
| -0.40    | 0.00     | 0.74            | 0.72      | 0.095     | -0.002    | 0.101      | 0.103 | 0.057 | 0.059 |
| -0.50    | 0.00     | 0.54            | 0.52      | 0.081     | 0.031     | 0.092      | 0.093 | 0.046 | 0.074 |
| -0.55    | 0.00     | 0.52            | 0.50      | 0.102     | 0.026     | 0.097      | 0.097 | 0.094 | 0.081 |
| -0.60    | 0.00     | 0.57            | 0.53      | 0.137     | 0.020     | 0.117      | 0.116 | 0.121 | 0.096 |
| -0.65    | 0.00     | 0.63            | 0.50      | 0.177     | -0.028    | 0.125      | 0.122 | 0.131 | 0.109 |
| -0.70    | 0.00     | 0.67            | 0.63      | 0.211     | -0.049    | 0.119      | 0.120 | 0.133 | 0.107 |
| -0.75    | 0.00     | 0.72            | 0.55      | 0.227     | -0.057    | 0.126      | 0.136 | 0.123 | 0.127 |
| -0.80    | 0.00     | 0.74            | 0.68      | 0.225     | -0.095    | 0.132      | 0.141 | 0.107 | 0.134 |
| -0.80    | -0.10    | 0.70            | 0.67      | 0.133     | 0.019     | 0.119      | 0.121 | 0.104 | 0.123 |
| -0.70    | -0.10    | 0.67            | 0.67      | 0.124     | -0.002    | 0.115      | 0.116 | 0.110 | 0.126 |
| -0.70    | -0.10    | 0.67            | 0.60      | 0.093     | -0.021    | 0.116      | 0.117 | 0.123 | 0.120 |
| -0.65    | -0.10    | 0.58            | 0.55      | 0.093     | -0.016    | 0.121      | 0.122 | 0.119 | 0.102 |
| -0.60    | -0.10    | 0.53            | 0.51      | 0.077     | -0.054    | 0.100      | 0.099 | 0.097 | 0.073 |
| -0.55    | -0.10    | 0.51            | 0.49      | 0.071     | -0.047    | 0.096      | 0.097 | 0.083 | 0.070 |
| -0.50    | -0.10    | 0.53            | 0.51      | 0.076     | -0.036    | 0.099      | 0.100 | 0.075 | 0.070 |
| 0.40     | -0.10    | 0.70            | 0.68      | 0.079     | -0.019    | 0.110      | 0.111 | 0.071 | 0.069 |
| 0.30     | -0.10    | 1.05            | 1.04      | 0.091     | -0.015    | 0.060      | 0.061 | 0.036 | 0.035 |
| 0.20     | -0.10    | 1.09            | 1.09      | 0.078     | -0.004    | 0.028      | 0.028 | 0.011 | 0.015 |
| 0.10     | -0.10    | 1.09            | 1.09      | 0.070     | -0.004    | 0.032      | 0.032 | 0.018 | 0.015 |
| 0.00     | -0.10    | 1.09            | 1.08      | 0.062     | -0.003    | 0.030      | 0.030 | 0.018 | 0.017 |
| 0.10     | -0.10    | 1.08            | 1.08      | 0.054     | -0.003    | 0.030      | 0.030 | 0.017 | 0.016 |
| 0.20     | -0.10    | 1.08            | 1.08      | 0.049     | -0.002    | 0.030      | 0.030 | 0.017 | 0.016 |
| 0.30     | -0.10    | 1.08            | 1.08      | 0.047     | 0.001     | 0.027      | 0.027 | 0.017 | 0.013 |
| 0.40     | -0.10    | 1.08            | 1.08      | 0.045     | -0.002    | 0.034      | 0.034 | 0.019 | 0.017 |
| 0.50     | -0.10    | 1.07            | 1.07      | 0.043     | -0.004    | 0.034      | 0.034 | 0.010 | 0.013 |
| 0.60     | -0.10    | 1.07            | 1.07      | 0.041     | -0.001    | 0.037      | 0.037 | 0.026 | 0.021 |
| 0.70     | -0.10    | 1.06            | 1.05      | 0.036     | -0.004    | 0.039      | 0.039 | 0.029 | 0.023 |
| 0.80     | -0.10    | 1.04            | 1.04      | 0.026     | -0.006    | 0.045      | 0.045 | 0.035 | 0.030 |
| 0.80     | -0.20    | 1.04            | 1.04      | 0.024     | -0.010    | 0.047      | 0.047 | 0.038 | 0.027 |
| 0.70     | -0.20    | 1.07            | 1.07      | 0.075     | -0.007    | 0.038      | 0.028 | 0.034 | 0.022 |
| 0.60     | -0.20    | 1.07            | 1.07      | 0.040     | -0.005    | 0.034      | 0.034 | 0.025 | 0.020 |
| 0.50     | -0.20    | 1.08            | 1.08      | 0.046     | -0.005    | 0.034      | 0.034 | 0.023 | 0.018 |
| 0.40     | -0.20    | 1.08            | 1.08      | 0.048     | -0.006    | 0.033      | 0.033 | 0.018 | 0.017 |
| 0.30     | -0.20    | 1.08            | 1.08      | 0.040     | -0.003    | 0.026      | 0.026 | 0.020 | 0.013 |
| 0.20     | -0.20    | 1.08            | 1.08      | 0.050     | -0.007    | 0.031      | 0.030 | 0.018 | 0.015 |
| 0.10     | -0.20    | 1.08            | 1.03      | 0.050     | -0.007    | 0.031      | 0.031 | 0.016 | 0.014 |
| 0.00     | -0.20    | 1.07            | 1.09      | 0.056     | -0.011    | 0.032      | 0.032 | 0.016 | 0.016 |
| -0.10    | -0.20    | 1.09            | 1.09      | 0.061     | -0.015    | 0.038      | 0.038 | 0.019 | 0.015 |
| -0.20    | -0.20    | 1.10            | 1.10      | 0.068     | -0.020    | 0.031      | 0.031 | 0.021 | 0.014 |
| -0.30    | -0.20    | 1.04            | 1.04      | 0.076     | -0.043    | 0.073      | 0.079 | 0.041 | 0.040 |
| -0.40    | -0.20    | 0.68            | 0.66      | 0.079     | -0.038    | 0.126      | 0.127 | 0.074 | 0.071 |
| -0.50    | -0.20    | 0.53            | 0.51      | 0.063     | -0.077    | 0.076      | 0.097 | 0.064 | 0.071 |
| -0.55    | -0.20    | 0.53            | 0.51      | 0.044     | -0.054    | 0.073      | 0.074 | 0.088 | 0.073 |
| -0.60    | -0.20    | 0.55            | 0.53      | 0.040     | -0.076    | 0.107      | 0.109 | 0.098 | 0.075 |
| -0.65    | -0.20    | 0.62            | 0.60      | 0.036     | -0.043    | 0.119      | 0.122 | 0.102 | 0.075 |
| -0.70    | -0.20    | 0.68            | 0.67      | 0.048     | -0.009    | 0.111      | 0.115 | 0.098 | 0.100 |
| -0.75    | -0.20    | 0.74            | 0.73      | 0.059     | 0.029     | 0.101      | 0.104 | 0.084 | 0.075 |
| -0.80    | -0.20    | 0.80            | 0.78      | 0.056     | 0.073     | 0.083      | 0.083 | 0.063 | 0.087 |

| $y$   | $z$   | $U_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.30 | -0.50 | 0.76      | 0.75      | 0.000     | 0.088     | 0.068      | 0.068 | 0.057 | 0.075 |
| 0.75  | -0.50 | 0.74      | 0.73      | -0.004    | 0.038     | 0.076      | 0.076 | 0.067 | 0.085 |
| -0.70 | -0.50 | 0.72      | 0.71      | 0.003     | 0.005     | 0.037      | 0.050 | 0.081 | 0.086 |
| -0.65 | -0.50 | 0.67      | 0.66      | -0.005    | 0.027     | 0.057      | 0.100 | 0.087 | 0.08  |
| -0.60 | -0.50 | 0.62      | 0.60      | 0.000     | -0.070    | 0.112      | 0.115 | 0.088 | 0.075 |
| -0.55 | -0.50 | 0.57      | 0.54      | 0.011     | -0.003    | 0.095      | 0.095 | 0.085 | 0.074 |
| -0.50 | -0.50 | 0.56      | 0.54      | 0.014     | -0.007    | 0.095      | 0.053 | 0.071 | 0.078 |
| 0.40  | -0.50 | 0.72      | 0.71      | 0.067     | -0.066    | 0.177      | 0.177 | 0.084 | 0.078 |
| -0.50 | -0.50 | 1.04      | 1.04      | 0.057     | -0.060    | 0.074      | 0.032 | 0.045 |       |
| -0.70 | -0.50 | 1.03      | 1.03      | 0.057     | -0.033    | 0.030      | 0.030 | 0.016 | 0.015 |
| -0.10 | -0.50 | 1.03      | 1.09      | 0.052     | -0.021    | 0.030      | 0.030 | 0.016 | 0.014 |
| 0.00  | -0.50 | 1.03      | 1.09      | 0.052     | -0.016    | 0.030      | 0.032 | 0.015 | 0.015 |
| 0.10  | -0.50 | 1.09      | 1.05      | 0.047     | -0.014    | 0.030      | 0.030 | 0.018 | 0.015 |
| 0.20  | -0.50 | 1.09      | 1.07      | 0.048     | -0.012    | 0.037      | 0.031 | 0.018 | 0.017 |
| 0.30  | -0.50 | 1.09      | 1.07      | 0.046     | -0.007    | 0.026      | 0.026 | 0.010 | 0.014 |
| 0.40  | -0.50 | 1.07      | 1.05      | 0.051     | -0.010    | 0.023      | 0.017 | 0.010 | 0.016 |
| 0.50  | -0.50 | 1.08      | 1.03      | 0.041     | -0.007    | 0.036      | 0.038 | 0.021 | 0.016 |
| 0.60  | -0.50 | 1.07      | 1.07      | 0.044     | -0.008    | 0.035      | 0.035 | 0.024 | 0.021 |
| 0.70  | -0.50 | 1.07      | 1.07      | 0.036     | -0.008    | 0.040      | 0.040 | 0.026 | 0.017 |
| 0.80  | -0.50 | 1.04      | 1.04      | 0.023     | -0.011    | 0.049      | 0.047 | 0.023 | 0.020 |
| 0.00  | -0.40 | 1.06      | 1.06      | 0.025     | -0.016    | 0.049      | 0.047 | 0.023 | 0.020 |
| 0.10  | -0.40 | 1.06      | 1.06      | 0.029     | -0.011    | 0.038      | 0.038 | 0.023 | 0.024 |
| 0.20  | -0.40 | 1.08      | 1.08      | 0.047     | -0.007    | 0.025      | 0.025 | 0.025 | 0.019 |
| 0.30  | -0.40 | 1.08      | 1.09      | 0.051     | -0.010    | 0.026      | 0.026 | 0.020 | 0.014 |
| 0.40  | -0.40 | 1.08      | 1.06      | 0.047     | -0.005    | 0.022      | 0.022 | 0.020 | 0.017 |
| 0.50  | -0.40 | 1.05      | 1.07      | 0.047     | -0.008    | 0.022      | 0.022 | 0.014 | 0.014 |
| 0.60  | -0.40 | 1.05      | 1.07      | 0.046     | -0.013    | 0.027      | 0.027 | 0.017 | 0.017 |
| 0.70  | -0.40 | 1.07      | 1.07      | 0.044     | -0.014    | 0.032      | 0.032 | 0.017 | 0.015 |
| 0.80  | -0.40 | 1.10      | 1.10      | 0.048     | -0.020    | 0.033      | 0.033 | 0.017 | 0.015 |
| 0.10  | -0.40 | 1.10      | 1.10      | 0.044     | -0.026    | 0.030      | 0.030 | 0.018 | 0.015 |
| 0.20  | -0.40 | 1.09      | 1.09      | 0.045     | -0.039    | 0.070      | 0.018 | 0.019 | 0.017 |
| 0.30  | -0.40 | 1.08      | 1.03      | 0.037     | -0.061    | 0.047      | 0.047 | 0.022 | 0.077 |
| 0.40  | -0.40 | 0.95      | 1.02      | 0.046     | -0.013    | 0.037      | 0.072 | 0.070 | 0.017 |
| 0.50  | -0.40 | 1.02      | 1.07      | 0.044     | -0.014    | 0.032      | 0.032 | 0.017 | 0.015 |
| 0.60  | -0.40 | 1.10      | 1.10      | 0.048     | -0.020    | 0.033      | 0.033 | 0.017 | 0.015 |
| 0.70  | -0.40 | 1.10      | 1.10      | 0.044     | -0.026    | 0.030      | 0.030 | 0.018 | 0.015 |
| 0.80  | -0.40 | 1.09      | 1.09      | 0.045     | -0.039    | 0.070      | 0.018 | 0.019 | 0.017 |
| 0.10  | -0.40 | 1.08      | 1.03      | 0.037     | -0.061    | 0.047      | 0.047 | 0.022 | 0.077 |
| 0.20  | -0.40 | 0.95      | 0.84      | 0.032     | -0.086    | 0.119      | 0.121 | 0.061 | 0.077 |
| 0.30  | -0.40 | 0.64      | 0.60      | 0.010     | -0.081    | 0.101      | 0.103 | 0.087 | 0.067 |
| 0.40  | -0.40 | 0.64      | 0.62      | -0.002    | -0.070    | 0.096      | 0.090 | 0.025 | 0.072 |
| 0.50  | -0.40 | 0.65      | 0.64      | -0.021    | -0.056    | 0.057      | 0.099 | 0.079 | 0.070 |
| 0.60  | -0.40 | 0.69      | 0.68      | -0.041    | -0.022    | 0.079      | 0.077 | 0.075 | 0.074 |
| 0.70  | -0.40 | 0.73      | 0.72      | -0.048    | 0.011     | 0.077      | 0.077 | 0.071 | 0.067 |
| 0.75  | -0.40 | 0.76      | 0.75      | 0.046     | 0.060     | 0.065      | 0.065 | 0.072 | 0.065 |
| 0.80  | -0.40 | 0.78      | 0.77      | -0.077    | 0.115     | 0.058      | 0.059 | 0.071 | 0.050 |
| 0.10  | -0.50 | 0.84      | 0.84      | -0.015    | 0.080     | 0.067      | 0.066 | 0.058 | 0.050 |
| 0.20  | -0.50 | 0.87      | 0.87      | -0.027    | 0.044     | 0.072      | 0.072 | 0.064 | 0.059 |
| 0.30  | -0.50 | 0.82      | 0.81      | -0.034    | 0.003     | 0.078      | 0.078 | 0.071 | 0.062 |
| 0.40  | -0.50 | 0.79      | 0.78      | -0.020    | -0.029    | 0.085      | 0.086 | 0.070 | 0.066 |
| 0.50  | -0.50 | 0.77      | 0.76      | -0.025    | -0.045    | 0.093      | 0.094 | 0.069 | 0.072 |
| 0.60  | -0.50 | 0.80      | 0.79      | -0.015    | -0.077    | 0.103      | 0.105 | 0.089 | 0.070 |
| 0.70  | -0.50 | 0.84      | 0.83      | -0.014    | -0.085    | 0.103      | 0.105 | 0.045 | 0.067 |
| 0.80  | -0.50 | 1.04      | 1.04      | 0.012     | -0.071    | 0.067      | 0.068 | 0.025 | 0.057 |
| 0.10  | -0.50 | 1.09      | 1.07      | 0.022     | -0.052    | 0.075      | 0.075 | 0.018 | 0.021 |
| 0.20  | -0.50 | 1.05      | 1.09      | 0.016     | -0.040    | 0.033      | 0.033 | 0.018 | 0.015 |
| 0.30  | -0.50 | 1.09      | 1.09      | 0.016     | -0.040    | 0.033      | 0.033 | 0.018 | 0.015 |
| 0.40  | -0.50 | 1.03      | 1.09      | 0.041     | -0.031    | 0.033      | 0.033 | 0.017 | 0.016 |
| 0.50  | -0.50 | 1.03      | 1.07      | 0.047     | -0.022    | 0.036      | 0.036 | 0.019 | 0.016 |
| 0.60  | -0.50 | 1.09      | 1.08      | 0.049     | -0.021    | 0.036      | 0.036 | 0.018 | 0.021 |
| 0.70  | -0.50 | 1.09      | 1.09      | 0.050     | -0.017    | 0.074      | 0.074 | 0.020 | 0.017 |
| 0.80  | -0.50 | 1.09      | 1.08      | 0.047     | -0.010    | 0.032      | 0.032 | 0.020 | 0.016 |
| 0.10  | -0.50 | 1.03      | 1.07      | 0.047     | -0.022    | 0.036      | 0.036 | 0.019 | 0.016 |
| 0.20  | -0.50 | 1.09      | 1.08      | 0.049     | -0.021    | 0.036      | 0.036 | 0.018 | 0.021 |
| 0.30  | -0.50 | 1.09      | 1.09      | 0.050     | -0.017    | 0.074      | 0.074 | 0.020 | 0.017 |
| 0.40  | -0.50 | 1.09      | 1.08      | 0.047     | -0.010    | 0.032      | 0.032 | 0.020 | 0.016 |
| 0.50  | -0.50 | 1.06      | 1.06      | 0.044     | -0.004    | 0.026      | 0.036 | 0.028 | 0.020 |
| 0.60  | -0.50 | 1.07      | 1.07      | 0.052     | -0.008    | 0.077      | 0.037 | 0.030 | 0.022 |
| 0.70  | -0.50 | 1.06      | 1.06      | 0.046     | -0.013    | 0.040      | 0.040 | 0.030 | 0.017 |
| 0.80  | -0.50 | 1.05      | 1.05      | 0.045     | -0.010    | 0.045      | 0.046 | 0.030 | 0.020 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | <i>Urms</i> | <i>U</i> | <i>V</i> | <i>W</i> | <i>U'</i> rms | <i>U'</i> | <i>V'</i> | <i>W'</i> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.80     | -0.60    | 1.05        | 1.05     | 0.047    | -0.018   | 0.051         | 0.051     | 0.041     | 0.032     |
| 0.70     | -0.60    | 1.07        | 1.06     | 0.040    | -0.012   | 0.044         | 0.044     | 0.038     | 0.027     |
| 0.60     | -0.60    | 1.08        | 1.08     | 0.046    | -0.008   | 0.037         | 0.037     | 0.033     | 0.022     |
| 0.50     | -0.60    | 1.08        | 1.07     | 0.049    | -0.008   | 0.036         | 0.036     | 0.029     | 0.021     |
| 0.40     | -0.60    | 1.08        | 1.07     | 0.049    | -0.010   | 0.036         | 0.037     | 0.024     | 0.019     |
| 0.30     | -0.60    | 1.05        | 1.05     | 0.052    | -0.001   | 0.126         | 0.141     | 0.020     | 0.066     |
| 0.20     | -0.60    | 1.08        | 1.08     | 0.047    | -0.014   | 0.033         | 0.033     | 0.020     | 0.018     |
| 0.10     | -0.60    | 1.09        | 1.07     | 0.046    | -0.016   | 0.034         | 0.034     | 0.019     | 0.018     |
| 0.00     | -0.60    | 1.09        | 1.09     | 0.042    | -0.019   | 0.030         | 0.030     | 0.018     | 0.016     |
| -0.10    | -0.60    | 1.10        | 1.10     | 0.040    | -0.020   | 0.029         | 0.029     | 0.017     | 0.015     |
| -0.20    | -0.60    | 1.10        | 1.10     | 0.027    | -0.028   | 0.027         | 0.027     | 0.017     | 0.014     |
| -0.30    | -0.60    | 1.09        | 1.09     | 0.017    | -0.037   | 0.027         | 0.027     | 0.016     | 0.016     |
| -0.40    | -0.60    | 1.09        | 1.09     | 0.002    | -0.043   | 0.032         | 0.032     | 0.017     | 0.022     |
| -0.50    | -0.60    | 1.08        | 1.08     | -0.014   | -0.046   | 0.041         | 0.042     | 0.018     | 0.042     |
| -0.55    | -0.60    | 1.05        | 1.04     | -0.023   | -0.050   | 0.067         | 0.067     | 0.019     | 0.052     |
| 0.60     | 0.60     | 1.03        | 1.02     | -0.037   | -0.044   | 0.077         | 0.078     | 0.017     | 0.061     |
| 0.65     | 0.60     | 1.00        | 1.00     | -0.037   | -0.029   | 0.075         | 0.076     | 0.075     | 0.059     |
| 0.70     | 0.60     | 0.97        | 0.97     | -0.029   | 0.003    | 0.067         | 0.070     | 0.035     | 0.063     |
| 0.75     | 0.60     | 0.93        | 0.93     | -0.020   | 0.034    | 0.063         | 0.063     | 0.040     | 0.053     |
| 0.80     | 0.60     | 0.89        | 0.89     | -0.011   | 0.057    | 0.055         | 0.055     | 0.043     | 0.044     |
| 0.80     | -0.70    | 0.76        | 0.76     | -0.016   | 0.043    | 0.047         | 0.047     | 0.038     | 0.034     |
| 0.75     | 0.70     | 0.58        | 0.58     | -0.022   | 0.026    | 0.056         | 0.056     | 0.030     | 0.030     |
| 0.70     | 0.70     | 0.76        | 0.76     | -0.025   | 0.030    | 0.077         | 0.078     | 0.025     | 0.027     |
| 0.65     | 0.70     | 1.03        | 1.03     | -0.027   | 0.007    | 0.078         | 0.079     | 0.022     | 0.029     |
| 0.60     | 0.70     | 1.08        | 1.08     | -0.027   | -0.008   | 0.027         | 0.027     | 0.022     | 0.021     |
| 0.55     | 0.70     | 1.08        | 1.08     | -0.019   | -0.013   | 0.024         | 0.024     | 0.010     | 0.016     |
| 0.50     | 0.70     | 1.08        | 1.08     | -0.013   | -0.020   | 0.023         | 0.023     | 0.016     | 0.015     |
| 0.40     | 0.70     | 1.08        | 1.08     | 0.002    | -0.024   | 0.025         | 0.025     | 0.017     | 0.015     |
| 0.30     | 0.70     | 1.07        | 1.07     | 0.014    | -0.024   | 0.026         | 0.026     | 0.018     | 0.015     |
| 0.20     | 0.70     | 1.08        | 1.08     | 0.024    | -0.022   | 0.028         | 0.028     | 0.010     | 0.017     |
| 0.10     | 0.70     | 1.07        | 1.07     | 0.035    | -0.021   | 0.031         | 0.031     | 0.010     | 0.017     |
| 0.00     | 0.70     | 1.07        | 1.07     | 0.040    | -0.019   | 0.029         | 0.029     | 0.010     | 0.018     |
| 0.10     | -0.70    | 1.07        | 1.07     | 0.044    | -0.016   | 0.032         | 0.032     | 0.021     | 0.018     |
| 0.10     | -0.70    | 1.07        | 1.07     | 0.047    | -0.013   | 0.033         | 0.033     | 0.021     | 0.020     |
| 0.10     | -0.70    | 1.07        | 1.07     | 0.048    | -0.012   | 0.034         | 0.034     | 0.021     | 0.017     |
| 0.40     | -0.70    | 1.06        | 1.06     | 0.046    | -0.013   | 0.033         | 0.033     | 0.025     | 0.027     |
| 0.50     | -0.70    | 1.07        | 1.06     | 0.047    | -0.015   | 0.039         | 0.039     | 0.030     | 0.023     |
| 0.60     | -0.70    | 1.05        | 1.05     | 0.042    | -0.010   | 0.038         | 0.038     | 0.026     | 0.028     |
| 0.70     | -0.70    | 1.07        | 1.07     | 0.020    | -0.014   | 0.041         | 0.041     | 0.034     | 0.027     |
| 0.40     | -0.70    | 1.04        | 1.04     | 0.016    | -0.017   | 0.049         | 0.049     | 0.044     | 0.033     |
| 0.40     | -0.80    | 1.05        | 1.05     | 0.037    | -0.023   | 0.044         | 0.045     | 0.037     | 0.030     |
| 0.50     | -0.80    | 1.07        | 1.07     | 0.039    | -0.017   | 0.041         | 0.041     | 0.030     | 0.027     |
| 0.60     | -0.80    | 1.07        | 1.07     | 0.034    | -0.015   | 0.041         | 0.041     | 0.032     | 0.026     |
| 0.50     | -0.80    | 1.08        | 1.08     | 0.033    | -0.016   | 0.036         | 0.036     | 0.034     | 0.025     |
| 0.40     | -0.80    | 1.08        | 1.08     | 0.036    | -0.012   | 0.035         | 0.035     | 0.030     | 0.025     |
| 0.30     | -0.80    | 1.08        | 1.08     | 0.033    | -0.015   | 0.029         | 0.029     | 0.027     | 0.017     |
| 0.20     | -0.80    | 1.07        | 1.09     | 0.030    | -0.016   | 0.033         | 0.033     | 0.021     | 0.017     |
| 0.10     | -0.80    | 1.08        | 1.08     | 0.035    | -0.014   | 0.036         | 0.036     | 0.022     | 0.017     |
| 0.00     | -0.80    | 1.07        | 1.07     | 0.030    | -0.014   | 0.031         | 0.031     | 0.022     | 0.020     |
| -0.10    | -0.80    | 1.08        | 1.08     | 0.022    | -0.016   | 0.029         | 0.029     | 0.019     | 0.020     |
| -0.20    | -0.80    | 1.08        | 1.08     | 0.017    | -0.017   | 0.031         | 0.031     | 0.025     | 0.027     |
| 0.30     | -0.80    | 1.08        | 1.08     | 0.004    | -0.018   | 0.027         | 0.028     | 0.021     | 0.016     |
| -0.40    | -0.80    | 1.08        | 1.08     | -0.002   | -0.017   | 0.027         | 0.027     | 0.021     | 0.021     |
| -0.50    | -0.80    | 1.08        | 1.08     | -0.011   | -0.015   | 0.028         | 0.028     | 0.020     | 0.021     |
| -0.55    | -0.80    | 1.08        | 1.08     | -0.021   | -0.012   | 0.027         | 0.027     | 0.019     | 0.021     |
| -0.60    | -0.80    | 1.08        | 1.08     | -0.022   | -0.011   | 0.031         | 0.031     | 0.021     | 0.019     |
| -0.65    | -0.80    | 1.08        | 1.08     | -0.029   | -0.007   | 0.031         | 0.031     | 0.024     | 0.022     |
| -0.70    | -0.80    | 1.07        | 1.07     | -0.028   | 0.000    | 0.038         | 0.038     | 0.026     | 0.025     |
| -0.75    | -0.80    | 1.07        | 1.03     | -0.030   | 0.015    | 0.044         | 0.044     | 0.028     | 0.016     |
| -0.80    | -0.80    | 1.00        | 1.00     | -0.024   | 0.032    | 0.047         | 0.047     | 0.075     | 0.030     |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | -0.85 | 1.03            | 1.03      | -0.043    | 0.030     | 0.051      | 0.051 | 0.042 | 0.043 |
| -0.75 | -0.85 | 1.05            | 1.05      | -0.048    | 0.010     | 0.040      | 0.049 | 0.038 | 0.034 |
| -0.70 | -0.85 | 1.06            | 1.06      | -0.044    | -0.004    | 0.048      | 0.049 | 0.037 | 0.036 |
| -0.65 | -0.85 | 1.06            | 1.06      | -0.040    | -0.011    | 0.048      | 0.049 | 0.034 | 0.033 |
| -0.60 | -0.85 | 1.07            | 1.07      | -0.038    | -0.013    | 0.044      | 0.044 | 0.040 | 0.037 |
| -0.55 | -0.85 | 1.06            | 1.06      | -0.026    | -0.014    | 0.047      | 0.047 | 0.026 | 0.026 |
| -0.50 | -0.85 | 1.07            | 1.07      | -0.023    | -0.015    | 0.043      | 0.043 | 0.029 | 0.031 |
| -0.40 | -0.85 | 1.07            | 1.07      | -0.017    | -0.018    | 0.045      | 0.045 | 0.033 | 0.030 |
| -0.30 | -0.85 | 1.07            | 1.07      | -0.009    | -0.020    | 0.042      | 0.042 | 0.031 | 0.028 |
| -0.20 | -0.85 | 1.06            | 1.06      | 0.003     | -0.019    | 0.040      | 0.040 | 0.035 | 0.032 |
| -0.10 | -0.85 | 1.06            | 1.06      | 0.003     | -0.015    | 0.045      | 0.045 | 0.038 | 0.035 |
| 0.00  | -0.85 | 1.06            | 1.06      | 0.012     | -0.012    | 0.045      | 0.045 | 0.039 | 0.030 |
| 0.10  | -0.85 | 1.06            | 1.06      | 0.007     | -0.016    | 0.045      | 0.042 | 0.032 | 0.034 |
| 0.20  | -0.85 | 1.06            | 1.05      | 0.014     | -0.016    | 0.041      | 0.045 | 0.034 | 0.031 |
| 0.30  | -0.85 | 1.06            | 1.06      | 0.021     | -0.015    | 0.039      | 0.045 | 0.027 | 0.033 |
| 0.40  | -0.85 | 1.06            | 1.06      | 0.026     | -0.010    | 0.037      | 0.037 | 0.034 | 0.026 |
| 0.50  | -0.85 | 1.06            | 1.06      | 0.028     | -0.017    | 0.041      | 0.042 | 0.036 | 0.027 |
| 0.60  | -0.85 | 1.05            | 1.05      | 0.029     | -0.016    | 0.041      | 0.041 | 0.032 | 0.025 |
| 0.70  | -0.85 | 1.03            | 1.03      | 0.023     | -0.022    | 0.054      | 0.054 | 0.041 | 0.032 |
| 0.80  | -0.85 | 1.02            | 1.01      | 0.015     | -0.022    | 0.048      | 0.048 | 0.041 | 0.033 |
| -0.80 | -0.90 | 1.01            | 1.00      | -0.082    | 0.024     | 0.074      | 0.074 | 0.063 | 0.048 |
| -0.75 | -0.90 | 1.02            | 1.02      | -0.076    | 0.007     | 0.064      | 0.064 | 0.057 | 0.044 |
| -0.70 | -0.90 | 1.02            | 1.02      | -0.072    | -0.003    | 0.068      | 0.068 | 0.052 | 0.046 |
| -0.65 | -0.90 | 1.03            | 1.03      | -0.071    | -0.007    | 0.059      | 0.060 | 0.057 | 0.039 |
| -0.60 | -0.90 | 1.02            | 1.02      | -0.065    | -0.015    | 0.068      | 0.069 | 0.050 | 0.037 |
| -0.55 | -0.90 | 1.02            | 1.01      | -0.051    | -0.018    | 0.071      | 0.071 | 0.050 | 0.036 |
| -0.50 | -0.90 | 1.03            | 1.03      | -0.042    | -0.017    | 0.060      | 0.060 | 0.044 | 0.042 |
| -0.40 | 0.70  | 1.02            | 1.01      | 0.017     | -0.019    | 0.057      | 0.057 | 0.040 | 0.035 |
| 0.30  | 0.70  | 1.03            | 1.07      | -0.017    | -0.017    | 0.057      | 0.057 | 0.046 | 0.047 |
| 0.20  | 0.70  | 1.03            | 1.07      | -0.017    | -0.015    | 0.056      | 0.056 | 0.044 | 0.040 |
| -0.10 | 0.70  | 1.02            | 1.02      | -0.004    | -0.020    | 0.059      | 0.059 | 0.037 | 0.025 |
| 0.00  | 0.70  | 1.07            | 1.07      | 0.004     | 0.021     | 0.061      | 0.061 | 0.019 | 0.017 |
| 0.10  | 0.70  | 1.07            | 1.01      | -0.001    | -0.018    | 0.052      | 0.053 | 0.049 | 0.030 |
| 0.20  | 0.70  | 1.02            | 1.02      | 0.002     | -0.015    | 0.058      | 0.059 | 0.045 | 0.037 |
| 0.30  | 0.70  | 1.05            | 1.05      | 0.005     | -0.019    | 0.050      | 0.050 | 0.037 | 0.025 |
| 0.40  | 0.70  | 1.05            | 1.05      | 0.017     | -0.021    | 0.048      | 0.048 | 0.041 | 0.026 |
| 0.50  | 0.70  | 1.03            | 1.03      | 0.016     | 0.018     | 0.055      | 0.055 | 0.036 | 0.017 |
| 0.60  | 0.70  | 1.03            | 1.03      | 0.025     | 0.021     | 0.056      | 0.056 | 0.038 | 0.028 |
| 0.70  | 0.70  | 1.02            | 1.02      | 0.018     | -0.019    | 0.055      | 0.055 | 0.042 | 0.029 |
| 0.80  | 0.70  | 1.01            | 1.01      | 0.017     | -0.027    | 0.048      | 0.048 | 0.042 | 0.025 |
| -0.80 | -0.53 | 0.98            | 0.96      | 0.059     | -0.021    | 0.086      | 0.087 | 0.057 | 0.051 |
| -0.75 | -0.53 | 0.98            | 0.97      | -0.057    | 0.008     | 0.073      | 0.073 | 0.043 | 0.054 |
| -0.70 | -0.53 | 0.99            | 0.99      | -0.050    | -0.005    | 0.077      | 0.077 | 0.043 | 0.044 |
| -0.65 | -0.53 | 0.99            | 0.99      | -0.050    | -0.000    | 0.072      | 0.072 | 0.046 | 0.046 |
| -0.60 | -0.53 | 1.00            | 1.00      | -0.047    | -0.015    | 0.076      | 0.075 | 0.044 | 0.048 |
| -0.55 | -0.53 | 1.00            | 1.00      | -0.044    | -0.016    | 0.073      | 0.073 | 0.041 | 0.042 |
| -0.50 | -0.53 | 1.00            | 1.00      | -0.036    | -0.019    | 0.070      | 0.070 | 0.046 | 0.045 |
| -0.40 | -0.53 | 1.00            | 1.00      | -0.021    | -0.019    | 0.071      | 0.071 | 0.038 | 0.040 |
| -0.30 | -0.53 | 1.01            | 1.00      | -0.013    | -0.015    | 0.067      | 0.068 | 0.044 | 0.045 |
| -0.20 | -0.53 | 1.01            | 1.01      | -0.012    | -0.016    | 0.065      | 0.065 | 0.046 | 0.041 |
| -0.10 | -0.53 | 1.01            | 1.01      | -0.007    | -0.017    | 0.066      | 0.067 | 0.043 | 0.040 |
| 0.00  | -0.53 | 1.00            | 0.99      | -0.006    | -0.011    | 0.076      | 0.076 | 0.042 | 0.039 |
| 0.10  | -0.53 | 1.00            | 1.00      | 0.002     | -0.020    | 0.070      | 0.070 | 0.043 | 0.042 |
| 0.20  | -0.53 | 1.00            | 1.00      | 0.006     | -0.023    | 0.065      | 0.065 | 0.041 | 0.037 |
| 0.30  | -0.53 | 1.02            | 1.02      | 0.010     | -0.018    | 0.060      | 0.060 | 0.039 | 0.030 |
| 0.40  | -0.53 | 1.02            | 1.02      | 0.011     | -0.023    | 0.060      | 0.060 | 0.042 | 0.031 |
| 0.50  | -0.53 | 1.02            | 1.01      | 0.025     | -0.021    | 0.061      | 0.061 | 0.029 | 0.028 |
| 0.55  | -0.53 | 1.02            | 1.01      | 0.026     | -0.016    | 0.075      | 0.063 | 0.011 | 0.038 |
| 0.60  | -0.53 | 1.02            | 1.01      | 0.028     | -0.016    | 0.071      | 0.055 | 0.013 | 0.044 |
| 0.65  | -0.53 | 1.02            | 1.01      | 0.040     | -0.015    | 0.054      | 0.058 | 0.012 | 0.038 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| -0.70    | -0.73    | 1.02        | 1.01     | 0.022    | -0.014   | 0.051         | 0.051     | 0.037     | 0.035     |
| -0.60    | -0.93    | 1.00        | 1.00     | 0.028    | -0.030   | 0.052         | 0.052     | 0.048     | 0.034     |
| -0.50    | -0.75    | 0.90        | 0.90     | -0.077   | 0.015    | 0.088         | 0.089     | 0.055     | 0.050     |
| -0.75    | -0.95    | 0.91        | 0.90     | -0.073   | 0.005    | 0.087         | 0.087     | 0.052     | 0.048     |
| -0.70    | -0.95    | 0.90        | 0.90     | -0.056   | 0.004    | 0.088         | 0.089     | 0.046     | 0.048     |
| -0.65    | -0.95    | 0.91        | 0.91     | -0.066   | -0.009   | 0.084         | 0.084     | 0.050     | 0.043     |
| -0.60    | -0.95    | 0.91        | 0.90     | -0.066   | -0.008   | 0.081         | 0.081     | 0.052     | 0.049     |
| -0.55    | -0.75    | 0.94        | 0.74     | -0.046   | -0.016   | 0.093         | 0.093     | 0.047     | 0.051     |
| -0.50    | -0.95    | 0.90        | 0.90     | -0.053   | -0.019   | 0.069         | 0.069     | 0.043     | 0.042     |
| -0.40    | -0.95    | 0.94        | 0.94     | -0.045   | -0.016   | 0.087         | 0.088     | 0.044     | 0.046     |
| -0.30    | -0.75    | 0.94        | 0.94     | -0.037   | -0.017   | 0.077         | 0.078     | 0.054     | 0.046     |
| -0.20    | -0.95    | 0.94        | 0.93     | -0.030   | -0.012   | 0.087         | 0.086     | 0.051     | 0.040     |
| -0.10    | -0.95    | 0.92        | 0.92     | -0.025   | -0.020   | 0.080         | 0.081     | 0.052     | 0.048     |
| 0.00     | -0.95    | 0.93        | 0.93     | -0.011   | -0.021   | 0.082         | 0.082     | 0.041     | 0.043     |
| 0.10     | -0.75    | 0.96        | 0.96     | 0.000    | -0.017   | 0.079         | 0.079     | 0.045     | 0.036     |
| 0.20     | -0.95    | 0.95        | 0.95     | -0.003   | -0.016   | 0.076         | 0.076     | 0.046     | 0.037     |
| 0.30     | -0.95    | 0.96        | 0.96     | 0.004    | -0.017   | 0.076         | 0.076     | 0.044     | 0.038     |
| 0.40     | -0.95    | 0.96        | 0.96     | -0.003   | -0.018   | 0.076         | 0.076     | 0.051     | 0.033     |
| 0.50     | -0.95    | 1.00        | 1.00     | 0.003    | -0.019   | 0.117         | 0.117     | 0.043     | 0.028     |
| 0.60     | -0.95    | 0.97        | 0.97     | 0.005    | -0.014   | 0.077         | 0.077     | 0.041     | 0.030     |
| 0.70     | -0.95    | 0.76        | 0.96     | 0.012    | -0.015   | 0.077         | 0.077     | 0.026     | 0.030     |
| 0.80     | -0.95    | 0.91        | 0.90     | 0.020    | -0.018   | 0.071         | 0.071     | 0.057     | 0.034     |
| -0.80    | -0.76    | 0.86        | 0.85     | -0.067   | 0.011    | 0.097         | 0.097     | 0.051     | 0.055     |
| -0.75    | -0.90    | 0.83        | 0.83     | -0.080   | 0.001    | 0.085         | 0.085     | 0.049     | 0.044     |
| -0.70    | -0.96    | 0.83        | 0.88     | -0.055   | -0.003   | 0.094         | 0.094     | 0.048     | 0.041     |
| 0.65     | -0.96    | 0.87        | 0.87     | -0.052   | -0.014   | 0.080         | 0.080     | 0.040     | 0.050     |
| -0.60    | -0.96    | 0.70        | 0.90     | -0.045   | -0.014   | 0.086         | 0.087     | 0.043     | 0.046     |
| -0.55    | -0.96    | 0.91        | 0.91     | -0.040   | -0.017   | 0.085         | 0.085     | 0.046     | 0.051     |
| -0.50    | -0.96    | 0.71        | 0.71     | -0.039   | -0.017   | 0.093         | 0.093     | 0.037     | 0.047     |
| -0.40    | -0.96    | 0.93        | 0.93     | -0.030   | -0.015   | 0.090         | 0.089     | 0.045     | 0.054     |
| -0.30    | -0.76    | 0.91        | 0.90     | -0.032   | -0.017   | 0.085         | 0.085     | 0.052     | 0.046     |
| -0.20    | -0.76    | 0.92        | 0.92     | -0.019   | -0.020   | 0.086         | 0.086     | 0.041     | 0.036     |
| -0.10    | -0.76    | 0.93        | 0.92     | -0.008   | -0.021   | 0.096         | 0.096     | 0.042     | 0.042     |
| 0.00     | -0.76    | 0.93        | 0.93     | -0.009   | -0.017   | 0.080         | 0.081     | 0.043     | 0.047     |
| 0.10     | 0.96     | 0.93        | 0.93     | -0.002   | -0.015   | 0.093         | 0.094     | 0.046     | 0.042     |
| 0.20     | -0.76    | 0.54        | 0.94     | 0.002    | -0.019   | 0.086         | 0.086     | 0.042     | 0.038     |
| 0.30     | -0.96    | 0.54        | 0.74     | 0.006    | -0.011   | 0.086         | 0.086     | 0.044     | 0.032     |
| 0.40     | -0.76    | 0.99        | 0.99     | 0.003    | -0.015   | 0.111         | 0.111     | 0.044     | 0.035     |
| 0.50     | -0.76    | 1.02        | 1.02     | 0.015    | -0.017   | 0.128         | 0.128     | 0.038     | 0.025     |
| 0.60     | -0.96    | 1.03        | 1.03     | 0.016    | -0.021   | 0.114         | 0.114     | 0.044     | 0.030     |
| 0.70     | -0.76    | 1.01        | 1.00     | 0.016    | -0.020   | 0.108         | 0.108     | 0.052     | 0.027     |
| 0.80     | -0.96    | 0.97        | 0.97     | 0.024    | -0.019   | 0.053         | 0.053     | 0.050     | 0.030     |
| 0.70     | 0.00     | 1.07        | 1.07     | 0.032    | 0.004    | 0.039         | 0.039     | 0.031     | 0.025     |
| 0.60     | 0.00     | 1.08        | 1.08     | 0.038    | 0.004    | 0.035         | 0.035     | 0.023     | 0.020     |
| 0.50     | 0.00     | 1.08        | 1.08     | 0.042    | 0.005    | 0.031         | 0.031     | 0.017     | 0.018     |
| 0.40     | 0.00     | 1.08        | 1.08     | 0.045    | 0.004    | 0.033         | 0.034     | 0.017     | 0.017     |
| 0.30     | 0.00     | 1.08        | 1.08     | 0.043    | 0.006    | 0.033         | 0.033     | 0.018     | 0.017     |
| 0.20     | 0.00     | 1.08        | 1.08     | 0.052    | 0.005    | 0.033         | 0.033     | 0.016     | 0.015     |
| 0.10     | 0.60     | 1.09        | 1.09     | 0.057    | 0.007    | 0.033         | 0.033     | 0.017     | 0.016     |
| 0.00     | 0.00     | 1.09        | 1.09     | 0.061    | 0.007    | 0.031         | 0.031     | 0.016     | 0.015     |
| -0.10    | 0.00     | 1.08        | 1.08     | 0.068    | 0.014    | 0.029         | 0.029     | 0.016     | 0.016     |
| -0.20    | 0.00     | 1.08        | 1.07     | 0.077    | 0.020    | 0.030         | 0.030     | 0.018     | 0.015     |
| -0.30    | 0.00     | 1.08        | 1.08     | 0.097    | 0.024    | 0.049         | 0.049     | 0.024     | 0.022     |
| -0.40    | 0.00     | 0.80        | 0.79     | 0.001    | 0.005    | 0.113         | 0.114     | 0.057     | 0.057     |
| -0.50    | 0.00     | 0.58        | 0.56     | 0.079    | 0.032    | 0.093         | 0.094     | 0.077     | 0.071     |
| -0.55    | 0.00     | 0.54        | 0.51     | 0.083    | 0.040    | 0.100         | 0.100     | 0.087     | 0.070     |
| -0.60    | 0.00     | 0.56        | 0.54     | 0.106    | 0.020    | 0.113         | 0.115     | 0.107     | 0.094     |
| -0.65    | 0.00     | 0.61        | 0.57     | 0.171    | -0.010   | 0.114         | 0.113     | 0.119     | 0.051     |
| -0.70    | 0.00     | 0.66        | 0.61     | 0.160    | -0.043   | 0.121         | 0.119     | 0.170     | 0.104     |
| -0.75    | 0.00     | 0.70        | 0.65     | 0.192    | -0.064   | 0.126         | 0.128     | 0.114     | 0.101     |

| $y$   | $z$  | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | 0.00 | 0.74            | 0.70      | 0.178     | -0.076    | 0.105      | 0.107 | 0.101 | 0.105 |
| -0.80 | 0.10 | 0.82            | 0.80      | 0.109     | -0.101    | 0.075      | 0.076 | 0.066 | 0.066 |
| -0.75 | 0.10 | 0.79            | 0.77      | 0.112     | -0.062    | 0.090      | 0.093 | 0.087 | 0.074 |
| -0.70 | 0.10 | 0.73            | 0.71      | 0.076     | -0.036    | 0.103      | 0.103 | 0.099 | 0.081 |
| -0.65 | 0.10 | 0.67            | 0.65      | 0.078     | 0.008     | 0.107      | 0.108 | 0.095 | 0.089 |
| -0.60 | 0.10 | 0.62            | 0.59      | 0.077     | 0.047     | 0.059      | 0.101 | 0.101 | 0.090 |
| -0.55 | 0.10 | 0.53            | 0.50      | 0.065     | 0.077     | 0.053      | 0.097 | 0.087 | 0.085 |
| -0.50 | 0.10 | 0.57            | 0.55      | 0.063     | 0.068     | 0.098      | 0.098 | 0.078 | 0.070 |
| -0.40 | 0.10 | 0.73            | 0.72      | 0.072     | 0.016     | 0.106      | 0.107 | 0.061 | 0.075 |
| -0.30 | 0.10 | 1.04            | 1.03      | 0.070     | 0.030     | 0.055      | 0.097 | 0.047 | 0.046 |
| -0.20 | 0.10 | 1.09            | 1.09      | 0.074     | 0.036     | 0.033      | 0.033 | 0.022 | 0.016 |
| -0.10 | 0.10 | 1.09            | 1.09      | 0.063     | 0.026     | 0.029      | 0.029 | 0.017 | 0.016 |
| 0.00  | 0.10 | 1.09            | 1.09      | 0.059     | 0.020     | 0.030      | 0.030 | 0.017 | 0.015 |
| 0.10  | 0.10 | 1.09            | 1.07      | 0.054     | 0.013     | 0.032      | 0.032 | 0.015 | 0.016 |
| 0.20  | 0.10 | 1.09            | 1.08      | 0.050     | 0.010     | 0.030      | 0.030 | 0.015 | 0.015 |
| 0.30  | 0.10 | 1.09            | 1.07      | 0.049     | 0.008     | 0.031      | 0.031 | 0.016 | 0.015 |
| 0.40  | 0.10 | 1.08            | 1.08      | 0.045     | 0.006     | 0.035      | 0.035 | 0.017 | 0.016 |
| 0.50  | 0.10 | 1.08            | 1.08      | 0.039     | 0.007     | 0.033      | 0.033 | 0.020 | 0.015 |
| 0.60  | 0.10 | 1.07            | 1.07      | 0.039     | 0.003     | 0.036      | 0.036 | 0.021 | 0.019 |
| 0.70  | 0.10 | 1.06            | 1.06      | 0.038     | 0.004     | 0.038      | 0.038 | 0.029 | 0.021 |
| 0.80  | 0.10 | 1.05            | 1.05      | 0.032     | 0.000     | 0.041      | 0.041 | 0.030 | 0.028 |
| 0.80  | 0.20 | 1.05            | 1.05      | 0.033     | 0.005     | 0.051      | 0.052 | 0.033 | 0.030 |
| 0.70  | 0.20 | 1.06            | 1.06      | 0.036     | 0.007     | 0.040      | 0.040 | 0.030 | 0.026 |
| 0.60  | 0.20 | 1.08            | 1.08      | 0.039     | 0.006     | 0.038      | 0.038 | 0.022 | 0.023 |
| 0.50  | 0.20 | 1.07            | 1.09      | 0.040     | 0.008     | 0.039      | 0.039 | 0.021 | 0.018 |
| 0.40  | 0.20 | 1.09            | 1.09      | 0.044     | 0.007     | 0.033      | 0.033 | 0.018 | 0.018 |
| 0.30  | 0.20 | 1.09            | 1.07      | 0.048     | 0.010     | 0.037      | 0.037 | 0.015 | 0.016 |
| 0.20  | 0.20 | 1.09            | 1.07      | 0.047     | 0.018     | 0.029      | 0.029 | 0.014 | 0.014 |
| 0.10  | 0.20 | 1.07            | 1.09      | 0.053     | 0.017     | 0.030      | 0.030 | 0.016 | 0.016 |
| 0.00  | 0.20 | 1.10            | 1.10      | 0.055     | 0.023     | 0.029      | 0.029 | 0.014 | 0.014 |
| 0.10  | 0.20 | 1.10            | 1.10      | 0.056     | 0.028     | 0.028      | 0.028 | 0.016 | 0.017 |
| 0.20  | 0.20 | 1.10            | 1.09      | 0.065     | 0.040     | 0.026      | 0.026 | 0.020 | 0.014 |
| 0.30  | 0.20 | 1.06            | 1.06      | 0.072     | 0.060     | 0.067      | 0.067 | 0.046 | 0.038 |
| 0.40  | 0.20 | 0.74            | 0.73      | 0.064     | 0.037     | 0.115      | 0.116 | 0.068 | 0.075 |
| 0.50  | 0.20 | 0.57            | 0.57      | 0.040     | 0.078     | 0.054      | 0.100 | 0.076 | 0.072 |
| 0.55  | 0.20 | 0.62            | 0.60      | 0.042     | 0.072     | 0.079      | 0.102 | 0.082 | 0.071 |
| 0.60  | 0.20 | 0.65            | 0.64      | 0.037     | 0.045     | 0.039      | 0.102 | 0.085 | 0.078 |
| 0.65  | 0.20 | 0.71            | 0.70      | 0.041     | 0.009     | 0.090      | 0.091 | 0.064 | 0.072 |
| 0.70  | 0.20 | 0.75            | 0.74      | 0.073     | -0.027    | 0.080      | 0.081 | 0.076 | 0.061 |
| 0.75  | 0.20 | 0.76            | 0.75      | 0.075     | -0.083    | 0.061      | 0.063 | 0.056 | 0.058 |
| 0.80  | 0.20 | 0.79            | 0.77      | 0.058     | -0.127    | 0.059      | 0.059 | 0.047 | 0.050 |
| 0.80  | 0.30 | 0.80            | 0.79      | -0.009    | -0.133    | 0.058      | 0.058 | 0.061 | 0.045 |
| 0.75  | 0.30 | 0.76            | 0.75      | -0.018    | -0.089    | 0.057      | 0.057 | 0.050 | 0.057 |
| 0.70  | 0.30 | 0.73            | 0.73      | -0.017    | -0.028    | 0.060      | 0.061 | 0.058 | 0.058 |
| 0.65  | 0.30 | 0.73            | 0.72      | -0.013    | 0.022     | 0.076      | 0.076 | 0.063 | 0.064 |
| 0.60  | 0.30 | 0.60            | 0.67      | -0.008    | 0.050     | 0.094      | 0.096 | 0.076 | 0.065 |
| 0.55  | 0.30 | 0.65            | 0.64      | -0.002    | 0.066     | 0.093      | 0.096 | 0.073 | 0.063 |
| 0.50  | 0.30 | 0.65            | 0.64      | 0.013     | 0.071     | 0.093      | 0.094 | 0.070 | 0.070 |
| 0.40  | 0.30 | 0.91            | 0.90      | 0.043     | 0.070     | 0.123      | 0.124 | 0.066 | 0.071 |
| 0.30  | 0.30 | 1.09            | 1.09      | 0.051     | 0.071     | 0.047      | 0.050 | 0.035 | 0.027 |
| 0.20  | 0.30 | 1.10            | 1.09      | 0.051     | 0.046     | 0.029      | 0.029 | 0.017 | 0.016 |
| 0.10  | 0.30 | 1.10            | 1.09      | 0.049     | 0.034     | 0.033      | 0.033 | 0.016 | 0.015 |
| 0.00  | 0.30 | 1.07            | 1.09      | 0.049     | 0.020     | 0.032      | 0.032 | 0.016 | 0.015 |
| 0.10  | 0.30 | 1.07            | 1.09      | 0.048     | 0.016     | 0.032      | 0.032 | 0.018 | 0.016 |
| 0.20  | 0.30 | 1.09            | 1.09      | 0.043     | 0.015     | 0.025      | 0.025 | 0.010 | 0.013 |
| 0.30  | 0.30 | 1.00            | 1.00      | 0.042     | 0.011     | 0.033      | 0.033 | 0.017 | 0.015 |
| 0.40  | 0.30 | 1.08            | 1.08      | 0.037     | 0.008     | 0.032      | 0.032 | 0.017 | 0.015 |
| 0.50  | 0.30 | 1.08            | 1.08      | 0.037     | 0.006     | 0.033      | 0.033 | 0.021 | 0.016 |
| 0.60  | 0.30 | 1.08            | 1.07      | 0.032     | 0.007     | 0.035      | 0.035 | 0.023 | 0.020 |
| 0.70  | 0.30 | 1.06            | 1.06      | 0.032     | 0.013     | 0.041      | 0.041 | 0.025 | 0.024 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <u>y</u> | <u>z</u> | <u>Urms</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>U'</u> rms | <u>u'</u> | <u>v'</u> | <u>w'</u> |
|----------|----------|-------------|----------|----------|----------|---------------|-----------|-----------|-----------|
| 0.80     | 0.50     | 1.04        | 1.04     | 0.029    | 0.012    | 0.044         | 0.044     | 0.037     | 0.027     |
| 0.80     | 0.40     | 1.03        | 1.03     | 0.026    | 0.024    | 0.048         | 0.048     | 0.035     | 0.026     |
| 0.70     | 0.40     | 1.05        | 1.05     | 0.036    | 0.008    | 0.038         | 0.038     | 0.026     | 0.021     |
| 0.60     | 0.40     | 1.06        | 1.06     | 0.035    | 0.002    | 0.037         | 0.037     | 0.022     | 0.019     |
| 0.50     | 0.40     | 1.07        | 1.06     | 0.040    | 0.008    | 0.039         | 0.040     | 0.020     | 0.016     |
| 0.40     | 0.40     | 1.08        | 1.08     | 0.039    | 0.010    | 0.033         | 0.033     | 0.018     | 0.017     |
| 0.30     | 0.40     | 1.08        | 1.08     | 0.042    | 0.011    | 0.032         | 0.032     | 0.017     | 0.017     |
| 0.20     | 0.40     | 1.08        | 1.08     | 0.043    | 0.020    | 0.028         | 0.028     | 0.016     | 0.013     |
| 0.10     | 0.40     | 1.08        | 1.07     | 0.045    | 0.025    | 0.026         | 0.026     | 0.015     | 0.013     |
| 0.00     | 0.40     | 1.07        | 1.07     | 0.045    | 0.025    | 0.034         | 0.034     | 0.016     | 0.016     |
| -0.10    | 0.40     | 1.09        | 1.09     | 0.043    | 0.035    | 0.032         | 0.032     | 0.015     | 0.014     |
| -0.20    | 0.40     | 1.10        | 1.09     | 0.042    | 0.045    | 0.029         | 0.029     | 0.016     | 0.016     |
| -0.30    | 0.40     | 1.10        | 1.10     | 0.033    | 0.062    | 0.032         | 0.032     | 0.019     | 0.016     |
| -0.40    | 0.40     | 1.03        | 1.03     | 0.014    | 0.079    | 0.086         | 0.086     | 0.046     | 0.045     |
| -0.50    | 0.40     | 0.82        | 0.81     | -0.005   | 0.072    | 0.106         | 0.107     | 0.074     | 0.071     |
| -0.55    | 0.40     | 0.76        | 0.75     | -0.023   | 0.067    | 0.093         | 0.094     | 0.066     | 0.070     |
| -0.60    | 0.40     | 0.74        | 0.73     | -0.047   | 0.048    | 0.080         | 0.081     | 0.059     | 0.066     |
| -0.65    | 0.40     | 0.75        | 0.75     | -0.063   | 0.019    | 0.076         | 0.077     | 0.060     | 0.064     |
| -0.70    | 0.40     | 0.78        | 0.77     | -0.075   | -0.014   | 0.071         | 0.071     | 0.058     | 0.068     |
| -0.75    | 0.40     | 0.81        | 0.80     | -0.062   | -0.070   | 0.069         | 0.069     | 0.066     | 0.055     |
| -0.80    | 0.40     | 0.84        | 0.83     | -0.032   | -0.105   | 0.067         | 0.067     | 0.071     | 0.050     |
| -0.80    | 0.50     | 0.93        | 0.97     | -0.028   | -0.072   | 0.067         | 0.069     | 0.055     | 0.056     |
| -0.75    | 0.50     | 0.94        | 0.94     | -0.045   | -0.051   | 0.075         | 0.075     | 0.064     | 0.047     |
| -0.70    | 0.50     | 0.95        | 0.95     | -0.056   | -0.022   | 0.081         | 0.081     | 0.064     | 0.056     |
| -0.65    | 0.50     | 0.95        | 0.95     | -0.052   | 0.000    | 0.092         | 0.092     | 0.059     | 0.058     |
| -0.60    | 0.50     | 0.96        | 0.96     | -0.052   | 0.013    | 0.087         | 0.090     | 0.053     | 0.057     |
| -0.55    | 0.50     | 1.01        | 1.00     | -0.038   | 0.036    | 0.086         | 0.087     | 0.052     | 0.047     |
| -0.50    | 0.50     | 1.07        | 1.06     | -0.026   | 0.050    | 0.051         | 0.052     | 0.039     | 0.030     |
| -0.40    | 0.50     | 1.05        | 1.09     | -0.003   | 0.062    | 0.035         | 0.035     | 0.020     | 0.025     |
| -0.30    | 0.50     | 1.09        | 1.09     | 0.017    | 0.050    | 0.029         | 0.029     | 0.015     | 0.017     |
| -0.20    | 0.50     | 1.09        | 1.07     | 0.027    | 0.036    | 0.031         | 0.031     | 0.015     | 0.016     |
| -0.10    | 0.50     | 1.08        | 1.08     | 0.036    | 0.030    | 0.031         | 0.031     | 0.014     | 0.015     |
| 0.00     | 0.50     | 1.08        | 1.08     | 0.040    | 0.025    | 0.036         | 0.035     | 0.016     | 0.015     |
| 0.10     | 0.50     | 1.08        | 1.08     | 0.044    | 0.021    | 0.034         | 0.034     | 0.016     | 0.016     |
| 0.20     | 0.50     | 1.08        | 1.08     | 0.042    | 0.018    | 0.028         | 0.028     | 0.017     | 0.013     |
| 0.30     | 0.50     | 1.06        | 1.06     | 0.041    | 0.017    | 0.079         | 0.039     | 0.018     | 0.016     |
| 0.40     | 0.50     | 1.06        | 1.06     | 0.037    | 0.015    | 0.031         | 0.031     | 0.017     | 0.014     |
| 0.50     | 0.50     | 1.05        | 1.07     | 0.035    | 0.012    | 0.035         | 0.035     | 0.023     | 0.014     |
| 0.60     | 0.50     | 1.04        | 1.04     | 0.034    | 0.012    | 0.038         | 0.038     | 0.025     | 0.017     |
| 0.70     | 0.50     | 1.01        | 1.01     | 0.039    | 0.003    | 0.040         | 0.040     | 0.030     | 0.021     |
| 0.80     | 0.50     | 1.01        | 1.01     | 0.031    | 0.004    | 0.041         | 0.041     | 0.034     | 0.027     |
| 0.80     | 0.60     | 1.01        | 1.01     | 0.031    | 0.006    | 0.041         | 0.041     | 0.039     | 0.028     |
| 0.70     | 0.60     | 1.02        | 1.02     | 0.036    | 0.007    | 0.039         | 0.039     | 0.028     | 0.023     |
| 0.60     | 0.60     | 1.03        | 1.03     | 0.032    | 0.007    | 0.037         | 0.037     | 0.024     | 0.020     |
| 0.50     | 0.60     | 1.04        | 1.04     | 0.031    | 0.014    | 0.031         | 0.031     | 0.020     | 0.015     |
| 0.40     | 0.60     | 1.03        | 1.03     | 0.034    | 0.017    | 0.031         | 0.031     | 0.017     | 0.012     |
| 0.30     | 0.60     | 1.04        | 1.04     | 0.034    | 0.019    | 0.036         | 0.036     | 0.018     | 0.015     |
| 0.20     | 0.60     | 1.06        | 1.06     | 0.042    | 0.020    | 0.031         | 0.031     | 0.017     | 0.014     |
| 0.10     | 0.60     | 1.06        | 1.06     | 0.044    | 0.013    | 0.033         | 0.033     | 0.016     | 0.014     |
| 0.00     | 0.60     | 1.08        | 1.08     | 0.035    | 0.014    | 0.032         | 0.032     | 0.014     | 0.016     |
| -0.10    | 0.60     | 1.10        | 1.10     | 0.029    | 0.022    | 0.034         | 0.033     | 0.015     | 0.017     |
| -0.20    | 0.60     | 1.10        | 1.10     | 0.017    | 0.028    | 0.032         | 0.032     | 0.014     | 0.017     |
| -0.30    | 0.60     | 1.10        | 1.10     | 0.008    | 0.035    | 0.029         | 0.029     | 0.014     | 0.015     |
| -0.40    | 0.60     | 1.10        | 1.07     | -0.007   | 0.040    | 0.028         | 0.029     | 0.014     | 0.015     |
| -0.50    | 0.60     | 1.10        | 1.07     | -0.026   | 0.038    | 0.032         | 0.032     | 0.016     | 0.018     |
| -0.55    | 0.60     | 1.10        | 1.10     | -0.033   | 0.031    | 0.031         | 0.032     | 0.017     | 0.021     |
| -0.60    | 0.60     | 1.09        | 1.09     | -0.042   | 0.021    | 0.033         | 0.033     | 0.018     | 0.022     |
| -0.65    | 0.60     | 1.09        | 1.09     | -0.044   | 0.010    | 0.041         | 0.041     | 0.025     | 0.025     |
| -0.70    | 0.60     | 1.06        | 1.06     | -0.041   | -0.006   | 0.058         | 0.058     | 0.033     | 0.029     |
| -0.75    | 0.60     | 0.99        | 0.99     | -0.031   | -0.029   | 0.057         | 0.057     | 0.038     | 0.040     |

| $y$   | $z$   | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $u'$  | $v'$  | $w'$  |
|-------|-------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.80 | 0.60  | 0.53            | 0.73      | -0.016    | -0.054    | 0.051      | 0.051 | 0.041 | 0.037 |
| -0.80 | 0.70  | 0.99            | 0.99      | -0.017    | -0.028    | 0.047      | 0.047 | 0.030 | 0.032 |
| -0.75 | 0.70  | 1.03            | 1.07      | -0.019    | -0.016    | 0.051      | 0.051 | 0.028 | 0.028 |
| -0.70 | 0.70  | 1.07            | 1.07      | -0.030    | 0.002     | 0.041      | 0.041 | 0.020 | 0.020 |
| -0.65 | 0.70  | 1.09            | 1.09      | -0.031    | 0.013     | 0.027      | 0.027 | 0.017 | 0.016 |
| -0.60 | 0.70  | 1.09            | 1.09      | -0.027    | 0.017     | 0.028      | 0.028 | 0.015 | 0.020 |
| -0.55 | 0.70  | 1.09            | 1.09      | -0.025    | 0.022     | 0.027      | 0.027 | 0.014 | 0.015 |
| -0.50 | 0.70  | 1.09            | 1.09      | -0.019    | 0.023     | 0.027      | 0.027 | 0.016 | 0.017 |
| -0.40 | 0.70  | 1.10            | 1.09      | -0.008    | 0.022     | 0.030      | 0.030 | 0.015 | 0.014 |
| -0.30 | 0.70  | 1.10            | 1.09      | 0.002     | 0.024     | 0.027      | 0.027 | 0.013 | 0.014 |
| -0.20 | 0.70  | 1.07            | 1.07      | 0.011     | 0.021     | 0.035      | 0.035 | 0.015 | 0.013 |
| -0.10 | 0.70  | 1.07            | 1.07      | 0.020     | 0.016     | 0.030      | 0.030 | 0.015 | 0.014 |
| 0.00  | 0.70  | 1.05            | 1.05      | 0.031     | 0.008     | 0.028      | 0.028 | 0.017 | 0.016 |
| 0.10  | 0.70  | 1.05            | 1.05      | 0.038     | 0.003     | 0.032      | 0.032 | 0.017 | 0.017 |
| 0.20  | 0.70  | 1.04            | 1.05      | 0.031     | 0.018     | 0.032      | 0.032 | 0.020 | 0.018 |
| 0.30  | 0.70  | 1.04            | 1.04      | 0.029     | 0.024     | 0.031      | 0.031 | 0.018 | 0.020 |
| 0.40  | 0.70  | 1.04            | 1.05      | 0.029     | 0.015     | 0.033      | 0.033 | 0.020 | 0.018 |
| 0.50  | 0.70  | 1.04            | 1.04      | 0.027     | 0.011     | 0.032      | 0.032 | 0.024 | 0.017 |
| 0.60  | 0.70  | 1.03            | 1.03      | 0.028     | 0.006     | 0.035      | 0.035 | 0.029 | 0.021 |
| 0.70  | 0.70  | 1.03            | 1.03      | 0.031     | 0.007     | 0.041      | 0.041 | 0.032 | 0.024 |
| 0.80  | 0.70  | 1.02            | 1.02      | 0.025     | 0.009     | 0.043      | 0.043 | 0.039 | 0.026 |
| 0.90  | 0.70  | 1.00            | 1.00      | 0.018     | 0.012     | 0.043      | 0.043 | 0.041 | 0.031 |
| 0.70  | 0.80  | 1.03            | 1.03      | 0.023     | 0.010     | 0.039      | 0.039 | 0.032 | 0.026 |
| 0.60  | 0.80  | 1.03            | 1.03      | 0.022     | 0.011     | 0.036      | 0.036 | 0.023 | 0.020 |
| 0.50  | 0.80  | 1.04            | 1.03      | 0.022     | 0.012     | 0.036      | 0.036 | 0.024 | 0.021 |
| 0.40  | 0.80  | 1.03            | 1.03      | 0.023     | 0.015     | 0.036      | 0.036 | 0.027 | 0.020 |
| 0.30  | 0.80  | 1.04            | 1.04      | 0.017     | 0.024     | 0.034      | 0.034 | 0.023 | 0.021 |
| 0.20  | 0.80  | 1.03            | 1.03      | 0.008     | 0.020     | 0.034      | 0.033 | 0.020 | 0.019 |
| 0.10  | 0.80  | 1.04            | 1.04      | 0.003     | 0.008     | 0.035      | 0.035 | 0.022 | 0.022 |
| 0.00  | 0.80  | 1.04            | 1.04      | 0.010     | 0.006     | 0.031      | 0.031 | 0.024 | 0.019 |
| -0.10 | 0.80  | 1.02            | 1.02      | 0.010     | 0.007     | 0.031      | 0.031 | 0.023 | 0.021 |
| -0.20 | 0.80  | 1.04            | 1.04      | 0.004     | 0.009     | 0.034      | 0.034 | 0.021 | 0.022 |
| -0.30 | 0.80  | 1.04            | 1.04      | -0.003    | 0.012     | 0.032      | 0.033 | 0.021 | 0.022 |
| -0.40 | 0.80  | 1.05            | 1.05      | -0.012    | 0.011     | 0.032      | 0.032 | 0.021 | 0.026 |
| -0.50 | 0.80  | 1.10            | 1.10      | -0.021    | 0.014     | 0.030      | 0.029 | 0.025 | 0.025 |
| -0.55 | 0.80  | 1.10            | 1.10      | -0.025    | 0.013     | 0.027      | 0.027 | 0.026 | 0.027 |
| -0.60 | 0.80  | 1.09            | 1.09      | -0.028    | 0.008     | 0.034      | 0.034 | 0.023 | 0.028 |
| -0.65 | 0.80  | 1.09            | 1.09      | -0.033    | 0.000     | 0.034      | 0.034 | 0.026 | 0.033 |
| -0.70 | 0.80  | 1.09            | 1.08      | -0.034    | -0.005    | 0.040      | 0.040 | 0.025 | 0.030 |
| -0.75 | 0.80  | 1.06            | 1.06      | -0.030    | -0.015    | 0.047      | 0.047 | 0.029 | 0.031 |
| -0.80 | 0.80  | 1.04            | 1.04      | -0.031    | -0.033    | 0.049      | 0.049 | 0.036 | 0.026 |
| -0.85 | 0.80  | 1.04            | 1.03      | -0.031    | -0.058    | 0.050      | 0.050 | 0.040 | 0.043 |
| -0.85 | 0.70  | 0.98            | 0.97      | -0.012    | -0.064    | 0.046      | 0.046 | 0.036 | 0.032 |
| -0.85 | 0.60  | 0.93            | 0.92      | -0.012    | -0.073    | 0.049      | 0.049 | 0.045 | 0.041 |
| -0.85 | 0.50  | 0.90            | 0.90      | -0.016    | -0.104    | 0.061      | 0.060 | 0.051 | 0.047 |
| -0.85 | 0.40  | 0.87            | 0.85      | -0.017    | -0.124    | 0.063      | 0.063 | 0.058 | 0.046 |
| -0.85 | 0.30  | 0.83            | 0.81      | 0.000     | -0.166    | 0.060      | 0.058 | 0.060 | 0.050 |
| -0.85 | 0.20  | 0.82            | 0.80      | 0.041     | -0.152    | 0.060      | 0.061 | 0.054 | 0.055 |
| -0.85 | 0.10  | 0.85            | 0.83      | 0.106     | -0.146    | 0.059      | 0.061 | 0.051 | 0.067 |
| -0.85 | 0.00  | 0.74            | 0.70      | 0.168     | -0.098    | 0.123      | 0.130 | 0.084 | 0.117 |
| -0.85 | -0.10 | 0.74            | 0.70      | 0.160     | 0.006     | 0.136      | 0.138 | 0.076 | 0.175 |
| -0.85 | -0.20 | 0.81            | 0.79      | 0.093     | 0.078     | 0.082      | 0.085 | 0.070 | 0.092 |
| -0.85 | -0.30 | 0.78            | 0.77      | 0.042     | 0.111     | 0.059      | 0.059 | 0.052 | 0.070 |
| -0.85 | -0.40 | 0.79            | 0.78      | -0.017    | 0.127     | 0.057      | 0.056 | 0.053 | 0.051 |
| -0.85 | -0.50 | 0.85            | 0.84      | -0.018    | 0.090     | 0.071      | 0.070 | 0.057 | 0.047 |
| -0.85 | -0.60 | 0.89            | 0.87      | -0.011    | 0.059     | 0.053      | 0.053 | 0.046 | 0.047 |
| -0.85 | -0.70 | 0.94            | 0.94      | -0.012    | 0.059     | 0.058      | 0.058 | 0.037 | 0.039 |
| -0.85 | -0.80 | 1.02            | 1.02      | -0.028    | 0.045     | 0.047      | 0.047 | 0.041 | 0.035 |
| -0.70 | 0.80  | 1.02            | 1.01      | -0.019    | -0.105    | 0.066      | 0.068 | 0.046 | 0.040 |
| 0.70  | 0.70  | 1.00            | 0.99      | -0.007    | -0.127    | 0.061      | 0.063 | 0.044 | 0.045 |

**ORIGINAL PAGE IS  
OF POOR QUALITY**

| <i>y</i> | <i>z</i> | $\bar{U}_{rms}$ | $\bar{U}$ | $\bar{V}$ | $\bar{W}$ | $U'_{rms}$ | $U'$  | $V'$  | $W'$  |
|----------|----------|-----------------|-----------|-----------|-----------|------------|-------|-------|-------|
| -0.90    | 0.60     | 0.98            | 0.97      | 0.003     | -0.148    | 0.058      | 0.057 | 0.042 | 0.056 |
| -0.90    | 0.50     | 0.94            | 0.92      | 0.000     | -0.152    | 0.063      | 0.061 | 0.049 | 0.055 |
| -0.90    | 0.40     | 0.91            | 0.89      | 0.003     | -0.184    | 0.068      | 0.066 | 0.056 | 0.057 |
| -0.90    | 0.30     | 0.89            | 0.86      | 0.007     | -0.223    | 0.074      | 0.072 | 0.055 | 0.055 |
| -0.90    | 0.20     | 0.88            | 0.84      | 0.037     | -0.229    | 0.066      | 0.064 | 0.050 | 0.069 |
| -0.90    | 0.10     | 0.86            | 0.82      | 0.096     | -0.209    | 0.083      | 0.085 | 0.056 | 0.079 |
| -0.90    | 0.00     | 0.72            | 0.68      | 0.114     | -0.129    | 0.132      | 0.130 | 0.078 | 0.117 |
| -0.90    | -0.10    | 0.68            | 0.66      | 0.105     | 0.026     | 0.138      | 0.145 | 0.082 | 0.125 |
| -0.90    | -0.20    | 0.84            | 0.82      | 0.087     | 0.129     | 0.073      | 0.074 | 0.056 | 0.098 |
| -0.90    | -0.30    | 0.83            | 0.80      | 0.025     | 0.169     | 0.058      | 0.059 | 0.052 | 0.061 |
| -0.90    | -0.40    | 0.84            | 0.82      | -0.005    | 0.167     | 0.058      | 0.058 | 0.054 | 0.045 |
| -0.90    | -0.50    | 0.88            | 0.87      | -0.007    | 0.124     | 0.055      | 0.054 | 0.045 | 0.055 |
| -0.90    | -0.60    | 0.91            | 0.90      | 0.000     | 0.102     | 0.054      | 0.053 | 0.045 | 0.053 |
| -0.90    | -0.70    | 0.97            | 0.96      | 0.000     | 0.090     | 0.052      | 0.053 | 0.043 | 0.046 |
| -0.90    | -0.80    | 1.01            | 1.00      | -0.023    | 0.095     | 0.055      | 0.056 | 0.045 | 0.049 |
| -0.93    | 0.80     | 1.02            | 1.00      | -0.022    | -0.130    | 0.091      | 0.092 | 0.050 | 0.054 |
| -0.93    | 0.70     | 1.01            | 1.00      | 0.009     | -0.144    | 0.063      | 0.064 | 0.043 | 0.054 |
| -0.93    | 0.60     | 0.98            | 0.97      | 0.011     | -0.163    | 0.058      | 0.060 | 0.043 | 0.060 |
| -0.93    | 0.50     | 0.95            | 0.93      | 0.009     | -0.186    | 0.061      | 0.061 | 0.048 | 0.061 |
| -0.93    | 0.40     | 0.93            | 0.90      | 0.013     | -0.212    | 0.074      | 0.074 | 0.055 | 0.066 |
| -0.93    | 0.30     | 0.92            | 0.88      | 0.017     | -0.265    | 0.067      | 0.065 | 0.058 | 0.068 |
| -0.93    | 0.20     | 0.89            | 0.85      | 0.044     | -0.248    | 0.062      | 0.062 | 0.050 | 0.067 |
| -0.93    | 0.10     | 0.86            | 0.82      | 0.084     | -0.214    | 0.080      | 0.079 | 0.062 | 0.090 |
| -0.93    | 0.00     | 0.69            | 0.66      | 0.084     | -0.110    | 0.136      | 0.136 | 0.075 | 0.140 |
| -0.93    | -0.10    | 0.65            | 0.62      | 0.059     | 0.032     | 0.143      | 0.149 | 0.080 | 0.129 |
| -0.93    | -0.20    | 0.85            | 0.82      | 0.074     | 0.162     | 0.077      | 0.077 | 0.057 | 0.095 |
| -0.93    | -0.30    | 0.86            | 0.83      | 0.018     | 0.200     | 0.067      | 0.068 | 0.054 | 0.060 |
| -0.93    | -0.40    | 0.89            | 0.86      | 0.003     | 0.196     | 0.064      | 0.065 | 0.059 | 0.047 |
| -0.93    | -0.50    | 0.91            | 0.89      | 0.000     | 0.156     | 0.062      | 0.064 | 0.050 | 0.055 |
| -0.93    | -0.60    | 0.96            | 0.94      | 0.002     | 0.138     | 0.062      | 0.062 | 0.043 | 0.049 |
| -0.93    | -0.70    | 0.93            | 0.97      | 0.002     | 0.129     | 0.061      | 0.062 | 0.040 | 0.053 |
| -0.93    | -0.80    | 0.90            | 0.97      | -0.015    | 0.117     | 0.078      | 0.080 | 0.051 | 0.049 |
| -0.95    | 0.00     | 0.96            | 0.95      | -0.006    | -0.154    | 0.077      | 0.100 | 0.052 | 0.053 |
| -0.95    | 0.70     | 0.98            | 0.96      | 0.008     | -0.185    | 0.087      | 0.091 | 0.042 | 0.056 |
| -0.95    | 0.60     | 0.97            | 0.95      | 0.019     | -0.190    | 0.084      | 0.088 | 0.048 | 0.057 |
| -0.95    | 0.50     | 0.96            | 0.93      | 0.012     | -0.221    | 0.089      | 0.093 | 0.039 | 0.071 |
| -0.95    | 0.40     | 0.90            | 0.73      | 0.022     | -0.266    | 0.224      | 0.275 | 0.051 | 0.075 |
| -0.95    | 0.30     | 0.91            | 0.86      | 0.027     | -0.264    | 0.076      | 0.081 | 0.053 | 0.064 |
| -0.95    | 0.20     | 0.90            | 0.85      | 0.051     | -0.270    | 0.080      | 0.080 | 0.055 | 0.072 |
| -0.95    | 0.10     | 0.82            | 0.78      | 0.073     | -0.218    | 0.120      | 0.118 | 0.057 | 0.095 |
| -0.95    | 0.00     | 0.65            | 0.62      | 0.041     | -0.099    | 0.144      | 0.144 | 0.070 | 0.122 |
| -0.95    | -0.10    | 0.66            | 0.64      | 0.032     | 0.042     | 0.129      | 0.132 | 0.082 | 0.134 |
| -0.95    | -0.20    | 0.82            | 0.79      | 0.076     | 0.177     | 0.103      | 0.103 | 0.057 | 0.072 |
| -0.95    | -0.30    | 0.88            | 0.85      | 0.026     | 0.231     | 0.077      | 0.081 | 0.051 | 0.049 |
| -0.95    | -0.40    | 0.90            | 0.87      | 0.016     | 0.217     | 0.075      | 0.077 | 0.051 | 0.053 |
| -0.95    | -0.50    | 0.93            | 0.91      | 0.004     | 0.189     | 0.066      | 0.067 | 0.049 | 0.059 |
| -0.95    | -0.60    | 0.96            | 0.94      | 0.007     | 0.176     | 0.083      | 0.085 | 0.054 | 0.061 |
| -0.95    | -0.70    | 0.96            | 0.94      | 0.009     | 0.167     | 0.081      | 0.083 | 0.047 | 0.055 |
| -0.95    | -0.80    | 0.94            | 0.93      | -0.012    | 0.142     | 0.094      | 0.096 | 0.058 | 0.046 |