

N87-29434

S2-35

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Transonic Rotor Flow-Measurement Technique Using Holographic Interferometry

John K. Kittleson* and Yung H. Yu*

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U.S. Army Research and Technology Laboratories - AVSCOM

NASA Ames Research Center, Moffett Field, California

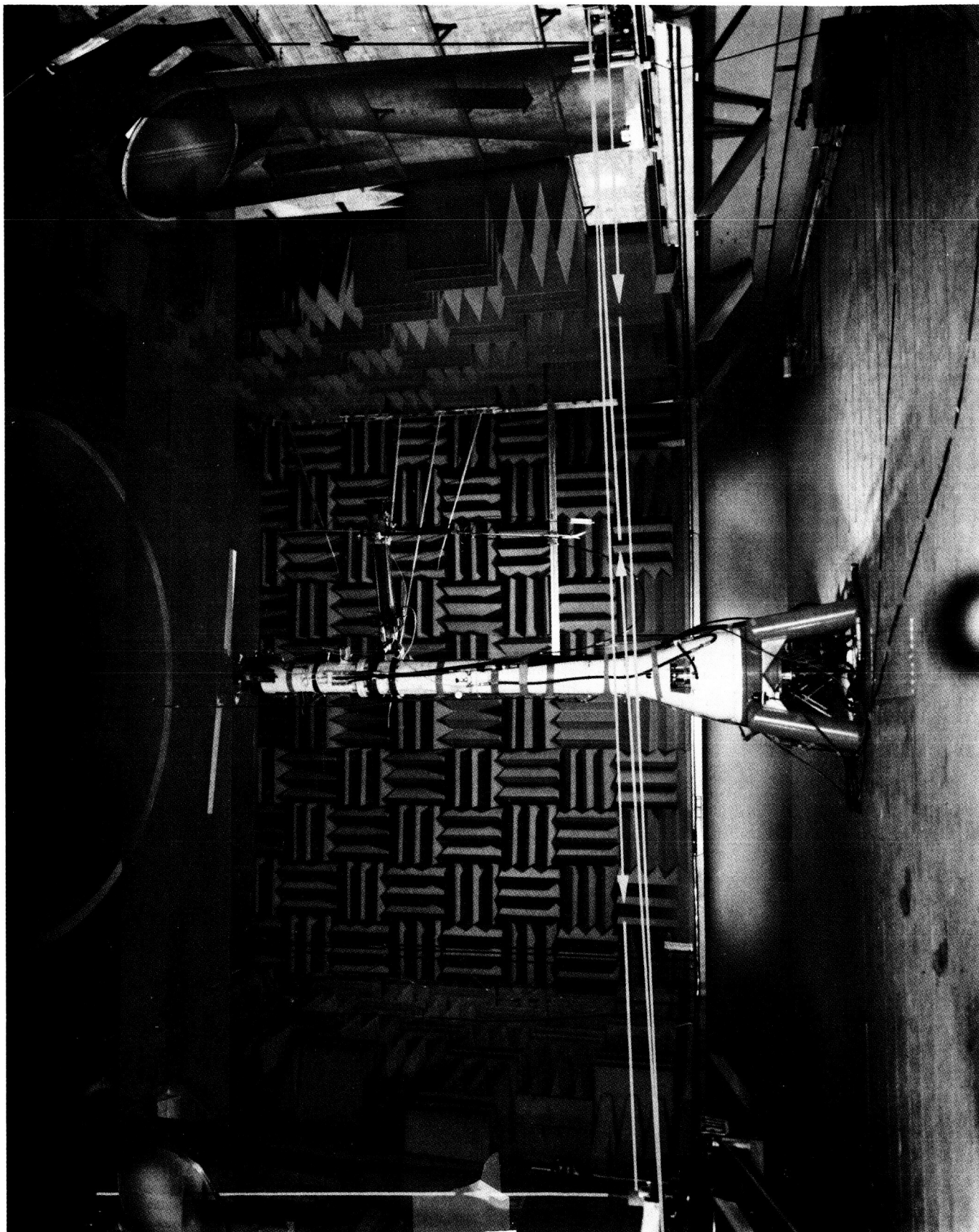
Abstract

Holographic interferometry is used to record interferograms of the flow near a hovering transonic rotor blade. A pulsed ruby laser recorded 40 interferograms with a 2-ft-diam view field near the model rotor-blade tip operating at a tip Mach number of 0.90. This paper presents the experimental procedure and example interferograms recorded in the rotor's tip-path-plane. In addition, a method currently being pursued to obtain quantitative flow information using computer-assisted tomography (CAT) with the holographic interferogram data, is outlined.

*Research Engineers.

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INTERFEROGRAMS AT VARIOUS AZIMUTHAL ANGLES

