ICASE

CUMULATIVE REPORTS AND PUBLICATIONS
through DECEMBER 31, 1992

(NASA-CR-191440) CUMULATIVE
REPORTS AND PUBLICATIONS (ICASE)
92 p

Contract Nos. NAS1-19480, NAS1-18605, NAS1-18107,
NAS1-17070, NAS1-17130, NAS1-15830,
NAS1-16394, NAS1-14101, NAS1-14472

April 1993

Institute for Computer Applications in Science and Engineering
NASA Langley Research Center
Hampton, Virginia 23681-0001

Operated by the Universities Space Research Association

National Aeronautics and
Space Administration
Langley Research Center
Hampton, Virginia 23681-0001
INTRODUCTION

The Institute for Computer Applications in Science and Engineering (ICASE) is operated at the Langley Research Center of NASA by the Universities Space Research Association (USRA) under a contract with the Center. USRA is a non-profit consortium of major U. S. colleges and universities.

The Institute conducts unclassified basic research in applied mathematics, numerical analysis, fluid mechanics, and computer science in order to extend and improve problem solving capabilities in science and engineering, particularly in aeronautics and space.

ICASE has a small permanent staff. Research is conducted primarily by visiting scientists from universities and industry who have resident appointments for limited periods of time, and by consultants. Members of NASA’s research staff also may be resident at ICASE for limited periods.

The major categories of the current ICASE research program are:

- Applied and numerical mathematics, including numerical analysis and algorithm development;
- Theoretical and computational research in fluid mechanics in selected areas of interest to LaRC, including acoustics and combustion;
- Experimental research in transition and turbulence and aerodynamics involving LaRC facilities and scientists;
- Computer science.

ICASE reports are considered to be primarily preprints of manuscripts that have been submitted to appropriate research journals or which are to appear in conference proceedings. In the next section, a complete listing of ICASE reports for the calendar years 1975 through December 1991 are given. The final section contains journal and conference proceedings references for older reports.

\footnote{Presently, ICASE is operated at NASA Langley Research Center, Hampton, VA, 23681-0001 under NASA Contract No. NAS1-19480. In the past, support has been provided by NASA Contract Nos. NAS1-18605, NAS1-17070, NAS1-17130, NAS1-15810, NAS1-16394, NAS1-14101, and NAS1-14472.}
ICASE Reports - 1992


**ICASE Reports - 1991**


ICASE Reports - 1990


**ICASE Reports - 1989**


**ICASE Reports - 1988**


**ICASE Reports - 1987**


ICASE Reports: 1986


48


**ICASE Reports: 1985**


Tal-Ezer, H.: *The eigenvalues of the pseudospectral Fourier approximation to the operator \( \sin(2x) \frac{d^2}{dx^2} \)*. ICASE Report No. 85-8, February 7, 1985, 10 pages.


**ICASE Reports: 1984**


ICASE Reports: 1983


**ICASE Reports: 1982**


Rose, M. E.: *A numerical scheme to solve div u = \rho, curl u = \zeta*. ICASE Report No. 82-8, April 7, 1982, 14 pages.


68


**ICASE Reports: 1981**


70


73


**ICASE Reports: 1980**


**ICASE Reports: 1979**


ICASE Reports: 1978


**ICASE Reports: 1977**


**ICASE Reports: 1976**


Raffaenetti, R. C. and M. D. Gunzburger: *A note on the application of the finite-difference boundary value method to the calculation of Born-Oppenheimer vibrational eigenvalues for the double minimum $E, F^1, \Sigma^+_q$ state of the hydrogen molecule*. ICASE Report No. 76-5, February 25, 1976, 5 pages.


ICASE Reports: 1975


87

**Earlier ICASE Reports**


Swint, E. and D. Yen: *Periodic solutions in a class of nonlinear dual-mass systems.* Computational Methods in Nonlinear Mechanics, University of Texas, Austin, Texas.


Other Reports by ICASE Personnel


**Report Title and Subtitle**

Cumulative Reports and Publications through December 31, 1992

**Publication Details**

Institute for Computer Applications in Science and Engineering
Mail Stop 132C, NASA Langley Research Center
Hampton, VA 23681-0001

**Funding Numbers**

C NAS1-19480, NAS1-18605, NAS1-18107, NAS1-17070, NAS1-17130, NAS1-15830, NAS1-16394, NAS1-14101, NAS1-14472

**Performing Organization Report Number**

NASA CR-191440

**Abstract**

This document contains a complete list of ICASE reports. Since ICASE reports are intended to be preprints of articles that will appear in journals or conference proceedings, the published reference is included when it is available.