

Announcement

International Conference on Numerical Methods for Coupled Problems

University College, Swansea, 7–11 September 1981

OBJECTIVES

Numerical techniques are extensively applied in the solution of problems which involve coupling:

Interacting Physical Systems

Examples: fluid–structure interaction, multi-phase flow, soil–structure interaction, contact between solids, soil liquefaction, electro-magnetic fields, thermo-mechanical coupling, biomechanics, elasto-hydrodynamic lubrication magnetohydrodynamics, heat and mass transfer, phenomenological relations and moisture stress development.

Discretisation/Solution Techniques

Examples: implicit–explicit and staggered time stepping schemes; linking of finite elements to boundary integrals, special singularity elements, and infinite elements; radiation boundary conditions.

The Conference will be concerned with the application of numerical methods to coupled field problems, and to the use of coupled numerical techniques, with the main aim of establishing the state-of-the-art of such methods. Analysis of industrial and technological applications will be especially welcomed. The Proceedings will be published prior to the Conference, and selected papers will be published later to commemorate the event.

INVITED KEYNOTE SPEAKERS

J. H. Argyris, R. W. Clough, J. Douglas, R. H. Gallagher, T. J. Hughes, A. R. Mitchell, J. T. Oden, K. C. Park, I. M. Smith, R. L. Taylor, C. W. Trowbridge, G. B. Warburton.

CALL FOR PAPERS

Abstracts are invited on the topics outlined above. Other papers of merit in related topics will also be considered for inclusion. The abstracts should be approximately

300 words in length and submitted before 31 January 1981. Final papers should be submitted by 30 April 1981.

For further details contact:

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Announcement

Symposium on Computers in Flow Predictions and Fluid Dynamics Experiments

ASME Winter Annual Meeting, November 1981, Sheraton-Park Hotel, Washington, D.C.

PURPOSE

With the recent advances in computer technology and numerical techniques, an increasing number of fluid mechanics problems are being simulated numerically. Also, digital computers have revolutionized the data-acquisition and data-processing phases of fundamental fluid dynamics experiments, thus providing meaningful data with which to verify the analyses and computer codes developed.

In view of this increasing activity and interest, a second Symposium on Computers in Flow Predictions and Measurements will be held during the ASME 1981 Winter Annual Meeting, November 15-20, 1981, in Washington, D.C.

The purpose of this symposium is to provide a forum for presentation and interchange of creative technical findings in the field of numerical methods in fluid mechanics with emphasis on internal flow problems and use of digital computers in fluid mechanics measurements.

ORGANIZATION AND SCOPE

The symposium is organized by the Fluid Mechanics and Fluid Machinery Committees of the ASME Fluids Engineering Division in cooperation with the American Institute of Aeronautics and Astronautics (AIAA). Six to eight formal sessions are planned; approximately half of these will be devoted to analytical prediction work and the other half to experimental work. Open forum sessions will be included to allow brief presentations of significant results; details will be announced later in *Mechanical Engineering* and the *AIAA Bulletin*.

There may be three or four invited papers. Contributed papers are solicited especially in the following areas:

- optimum grid generation for complex flow configurations;
- three-dimensional inviscid viscous flows and other flows with emphasis on numerical methods;
- new and improved numerical methods for turbulent flows;
- development of improved algorithms, e.g., non-iterative solvers, higher-order accurate schemes, etc.;

unique methods for computer-assisted analysis and display of experimental data;
computer interaction and/or control of fluid dynamics experiments;

special problems of interfacing on-line, real time, fluids measurements with
computer data acquisition and data processing.

For papers dealing with numerical methods, preference will be given to those
papers combining analytical methods with numerical methods and to those papers
based on working computer codes with well-defined applications. Use of numerical
visualization for three-dimensional flows is encouraged.

SELECTION OF TECHNICAL PAPERS

Papers will be tentatively selected for presentation based upon reviews of an
extended abstract of at least 1000 words, typed double-spaced, stating clearly the
purpose, results and conclusions of the work, with supporting figures and tables. *Five
copies of the abstracts should be submitted to Professor K. N. Ghia at the address
listed below.*

DEADLINES

Abstracts are due November 21, 1980. Authors will be notified of tentative accep-
tance by January 19, 1981. Final acceptance will be based upon review of the full-
length paper which must be received by March 27, 1981. Author-prepared mats for
the accepted papers will be due by July 3, 1981. Papers will be bound in a two-part
symposium volume to be made available at the meeting; one part will include papers
on analytical predictions and the other on experimental work.

SYMPOSIUM ORGANIZERS

Inquiries regarding the symposium should be addressed to one of the symposium
organizers based upon the subject categories listed below:

Numerical Methods

Prof. K. N. Ghia
Dept. of Aerospace Engg.
& Appl. Mech.
Mail Location 70
University of Cincinnati
Cincinnati, OH 45221
(513) 475-3243

Prof. T. J. Mueller
Dept. of Aerospace and
Mech. Engg.
Univ. of Notre Dame
Notre Dame, IN 46556
(219)283-7073

Measurement Techniques

Dr. B. Patel
Creare incorporated
Box 71
Hanover, NH 03755
(603) 643-3800

Announcement

Second National Symposium on Numerical Methods in Heat Transfer

Sponsored by the National Science Foundation and the Office of Naval Research

DATE AND PLACE

September 28–30, 1981. University of Maryland, College Park, Maryland.

SCOPE

- (1) Finite Difference Method.
- (2) Finite Element Method.
- (3) Comparison of Finite Difference Methods and Finite Element Methods.
- (4) Numerical Convective Instability.
- (5) Other Numerical Methods.
- (6) Applications to Heat Transfer Problems.

ABSTRACTS

Prospective presentations which lie within the aforementioned scope are advised to stress also at least one of the following subjects: (a) improvement of existing methods (b) assessment of numerical properties such as stability, convergence and error bounds, (c) introduction of a novel scheme and (d) comparison of no fewer than two methods used to solve the same physical problem.

Three copies of an abstract of approximately 1000 words describing the definition, formulation, method(s) and sample results of the work should be submitted to:

Professor Tein-Mo Shih
Department of Mechanical Engineering
University of Maryland
College Park, MD 20742
Phone: (301) 454-2408

DEADLINES

Receipt of abstracts: March 1, 1981.

Informing authors of acceptance: April 1, 1981.

Receipt of final manuscripts: August 1, 1981.

The conference proceeding will be published after the conference. Papers edited in the proceedings are presentations revised to incorporate reviewer's comments and judged to be of permanent value.