

Theoretical and Computational Acoustics '95

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Sheraton Waikiki Hotel, Honolulu, Hawaii, USA
21 – 25 Aug 1995

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World Scientific

Singapore • New Jersey • London • Hong Kong

Published by

World Scientific Publishing Co. Pte. Ltd.

P O Box 128, Farrer Road, Singapore 912805

USA office: Suite 1B, 1060 Main Street, River Edge, NJ 07661

UK office: 57 Shelton Street, Covent Garden, London WC2H 9HE

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ISBN 981-02-2683-7

Printed in Singapore.

PREFACE

This volume contains invited and contributed lectures presented at the Second International Conference on Theoretical and Computational Acoustics which was held on 21–25 August 1995, at the Sheraton Waikiki Hotel, Honolulu, Hawaii, U.S.A. This conference was sponsored jointly by the U.S. Naval Undersea Warfare Center (NUWC), the U.S. Office of Naval Research (ONR), the U.S. Naval Research Laboratory (NRL), NATO SACLANT Research Centre (Italy), Yale University, Columbia University, and National Taiwan University (Republic of China).

The objective of this conference was two-fold. First, it was held to provide a forum for active researchers to discuss their state-of-the-art research results and their recent major contributions in theoretical and computational acoustics and related areas. A second objective was to congregate researchers from different branches of science related to acoustics to exchange new ideas and to stimulate future research. This conference is a continuation of the first international conference held at the Mystic Hilton Hotel (Mystic, Connecticut U.S.A.) on 5–9 July 1993; however, the scope of technical areas was expanded to cover a few emerging and new topics.

These lectures examined various topics on acoustics and related areas including multi-dimensional wave propagation problems, the treatment of fluid-elastic interfaces, scattering and inverse problems, methods for computational acoustics, solutions to acoustic problems by supercomputing and parallel processing, aero- and seismo-acoustics, the application of neural networks to acoustics, and structural acoustics. Nationwide and worldwide researchers congregated in a forum to exchange new ideas and to encourage future research. Participants came from thirteen countries, representing 32 universities and 22 research laboratories. Their contributions and enthusiasm made this symposium a success. Also included in this volume is a poem contributed by Prof. Leopold B. Felsen of Boston University who expressed his feelings of regret for having missed this conference and missed meeting with all conference attendees.

A large number of contributions were in the area of structural acoustics. We wish to express our deep gratitude to Prof. David G. Crighton (University of Cambridge, ENGLAND) for his excellent keynote lecture on “Structural Acoustics with Thin Flow”, which gave a very good start to this conference in which structural acoustics was a dominating topic. Related to this topic, we would like to thank Prof. Jacobo Bielak (Carnegie Mellon University) and Prof. Isaac Harari (Tel Aviv University) for their diligent efforts in organizing a set of special sessions on structural acoustics. We must also thank the invited speakers, Prof. Michael K. Myers (NASA Langley Research Center) for his lecture on “A Boundary Integral Computational Scheme for Sound Radiation from Ducted Sources” and Dr. Alexandria Tolstoy for her lecture on “3D Propagation Issues and Models”. We also thank Prof. Jer-Ming Chiu (University of Memphis) for his lecture on “Seismotectonic Studies of the Hikurangi Subduction Zone in New Zealand”. It should not be neglected to mention that a comprehensive lecture on “Parabolic Equation

Development in Recent Decade", presented by one of the editors, been published as a Review Issue of the Journal of Computational Acoustics. A summary of that article appears in this volume.

We are very thankful to: ONR managers Drs. Richard Lau, Jeffrey Simmen, and Thomas Curtin; Drs. Edward Frenchi and Stanley A. Chin-Bing of NRL, Drs. David Bradley, William I. Roderick, and Finn B. Jensen of NATO SACLANT Undersea Research Centre, without their continuous support this conference would not have been possible. Our special thanks go to Prof. Yih-Hsing Pao of National Taiwan University (Republic of China) for his enthusiasm and whole-hearted support throughout this conference.

The continuous diligent efforts of our assistant editor, Anna C. Mastan, and conference secretary, Geraldine A Fortney, both from NUWC, deserve our particular thanks. We are grateful to the Director Larry C. Chiang (KWHE-TV 14 Chinese TV Program, Hawaii) and his wife Lily for organizing a special banquet entertainment program featuring a Chinese opera which was the first time such a performance was presented in our conference banquet history. We also thank Director-General Yu Ting-yu (Taipei Economic and Cultural Honolulu Office) for his support of this conference. The excellent tropical performance by members of the Ebb Tides on cultural Hawaiian and fire-knife dances provided the attendees with a very relaxing and enjoyable evening. Last but not least, our thanks go to Aileen Lee, who did a splendid job in hosting the conference banquet.

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