The Proceedings

INTERNATIONAL WORKSHOP ON SHIP AND PLATFORM MOTIONS

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Preface

In the past two decades, rapid progress has been made toward the development of mathematical models for predicting the performance of ships and platforms in realistic sea conditions. Though such mathematical models cannot yet substitute for physical-model testing in tanks, they have become very effective tools for analyzing, and sometimes even optimizing, specific engineering designs. Ship-motion and wave-force calculations are now carried out on a rather routine basis. Their restrictions and limitations are, however, not always well understood. Many important physical phenomena, particularly those in nonlinear regimes, await explanation. The development of nonlinear mathematical models has only just begun.

This workshop was originally conceived in the fall of 1982 by the Analytical Ship-Wave Relations Panel (H-5) of the Society of Naval Architects and Marine Engineers. Members of the panel found it desirable to bring together a community of active and new workers from industry, academia, and research organizations to conduct informal discussions on various hydrodynamic aspects of ship-motion and related problems that were of fundamental and/or practical interest. The response to the call of this meeting was such that the organizing committee found it appropriate to run it as a small international conference. The original workshop spirit was nevertheless well retained by having extended periods of joint discussions on papers presented in the same session, and by the willingness of the audience to participate. Parts of such discussions were transcribed by the session chairmen and are included here. The proceedings contains a sizable number of original contributions that heretofore have not been available in the published literature. It also covers a fairly diverse set of topics that are considered mathematically related to the usual ship/platform motion problems. Of particular importance are five outstanding reviews by authorities in this field that highlight many of the latest developments and current activities.

In this era of exciting progress mentioned above, Professor John V. Wehausen of the University of California stands out uniquely as the most distinguished individual in bringing light to all of us on the power of mathematical methods in solving practical hydrodynamic problems. His landmark article on "Surface Waves" with Professor E. V. Laitone is an indispensable companion to any worker in this field. Through his teaching, his students, and his outstanding research contributions, his influence can be felt worldwide. The annotated participant list reflects this well. In honor of his retirement, it is fitting that we dedicate these proceedings to Professor Wehausen, a distinguished colleague and an admirable teacher.

I am grateful to the National Science Foundation and the Office of Naval Research for the sponsorship of this workshop. George Lea (NSF) and Choung M. Lee (ONR) have been most supportive of the idea from the beginning. The smooth running of the entire program is a credit to Ms. Linda Reid of University Extension, whose expert help and advice have made many of the organization tasks an enjoyable experience for me.

R. W. Yeung

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