
REVIEWED BY T. C. T. TING1

This volume records the proceedings of a IUTAM Symposium on Nonlinear Water Waves, comprising three “keynote lectures”, 33 contributed papers, and 15 posters. Authors’ camera-ready contributions, in the usual variety of typefaces, are acceptably reproduced; there is a brief editors’ introduction and a full list of participants. The wide international representation included many leading water-wave researchers: The number of Japanese participants was naturally large, but numbers from the U.S.A. (8) and U.K. (2) were surprisingly small.

In the editors’ words: “The Symposium has intended to provide a wide scope of analytical and numerical methods as well as experimental studies for the analysis of the nonlinear phenomena related to water waves . . . . the scope of the presented papers includes the following topics: (1) Theoretical and experimental studies of nonlinear water waves, (2) Nonlinear instability and deformation of water waves, (3) Wave breaking, (4) Nonlinear wave-current interaction, (5) Nonlinear water waves around structures and ships, (6) Wave-body interaction, and (7) Nonlinear internal waves.”

The keynote lectures were by C. C. Mei on nonlinear diffraction effects, D. H. Peregrine on modeling of unsteady and breaking waves, and O. M. Faltinsen on nonlinear interactions between waves and bodies. The emphasis on nonlinear effects reflects recent theoretical and computational advances. These, in turn, are mainly motivated by the need to understand and predict the complex interactions of waves with ships, moored structures, and underwater topography.

As a whole, the contributions are an interesting sample of current research, including such topics as shallow-water solutions, standing waves in closed basins, breaking and spilling waves, resonant interactions, wave propagation over bodies and varying topography, second-order wave-induced forces on bodies, nonlinear ship waves, and simulation of wave spectra. With few exceptions, each paper is restricted in length to eight pages: Inevitably, some are tantalizingly brief and others are mercifully so. Equally inevitably, many have been, or will be, published in greater detail in referred journals. One paper contains the first recorded occurrence (and hopefully the last!) of the word “serendipidiously.”

The usefulness of this collection is transient: For a few years it will provide a convenient, though incomplete and disconnected, survey of current strands of water-wave research, of use to specialists in this and related areas. It would be a worthwhile, but not indispensable, addition to research libraries. I, for one, have learned something from reading it.


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This is a very well written book. The central theme of the book is the concept of eigenstrain, originally due to Eshelby, which has been systematically employed by Professor Mura in

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