

## PREFACE

In September of 2006, research leaders in the field of coastal engineering, fluid mechanics, and wave theory meet at Cornell University to celebrate the 60<sup>th</sup> birthday of Prof. Philip L.-F. Liu. The symposium was attended by numerous research collaborators, and many of Prof. Liu's past students. This volume is dedicated to Phil Liu, and his many past and future achievements.

As a scholar and researcher, Prof. Liu has been at the forefront of a variety of topics in coastal engineering, including nonlinear wave theory, tsunamis generation, propagation and runup, wave breaking processes, sediment transport processes, and the interaction of waves with structures. His research approach integrates analytical, computational and experimental methodologies in elegant ways. The ASCE has awarded his research excellence with the Walter L. Huber Civil Engineering Research Prize in 1978, the John G. Maffatt-Frank E. Nichol Harbor and Coastal Engineering Award in 1997, and the International Coastal Engineering Award in 2004. Prof. Liu was also a recipient of the prestigious J.S. Guggenheim Fellowship in 1980.

As an educator, Prof. Liu has spent his entire career at Cornell University, where he has taught courses in the area of Fluid Mechanics, Computational Methods and Modeling, Coastal Engineering and Water Wave Theories. At Cornell, Prof. Liu has supervised more than 35 graduate (MS/PhD) students. Many of his former graduate students have gone on to leadership position in universities, research institutions, and consulting firms, both nationally and internationally. These former students are building the future of coastal engineering in the U.S. and abroad.

To promote excellence and advancement of coastal engineering, Prof. Liu has become the founding editor for a book series entitled "Advanced Series on Ocean Engineering" started in 1989 and a review series entitled "Advances in Coastal and Ocean Engineering" in 1993. Both series have provided authors a platform to disseminate current research information and knowledge and the published volumes have reached a wide range of audience, including undergraduates, graduate students, researchers and engineers.

Prof. Liu has made very significant contributions to the advancement of coastal engineering in the U.S. and throughout the world in the manner of research, teaching and professional leadership. This volume is a compilation

of research papers, both review and new work, which have benefited in some way through the research Prof. Liu has completed. The reader will find that there are two main groups of papers presented here. The first group consists of papers written by some of Prof. Liu's long-term collaborators. This group starts off with a theoretical paper by Maarten Dingemans and continues with three coastal structure focused papers with authors including the notable researchers Hocine Oumeraci, Nobu Kobayashi, and Inigo Losada. Closing this first group are four papers on the subject of tsunamis and long waves. Prof. Liu's fellow organizers of the three International Workshop on Long-Wave Runup Models, Harry Yeh and Costas Synolakis, are among the authors.

The second group of papers is a series written by some of Prof. Liu's previous Ph.D. students. This section kicks off with a paper by Jerry Lennon, Prof. Liu's first Ph.D. student, and concludes with a paper by Tso-Ren Wu, one of the more recent graduates to come out of the Cornell program. Inside this group, the reader will find a wide range of topics, from groundwater flow to swash zone dynamics and transport, reflecting the breadth of topics in which Prof. Liu has been involved.

The attendees of the symposium thank Prof. Liu for his untiring enthusiasm to better understand the fundamental physics which govern all of the coastal engineering profession, and his leadership and education of this community.