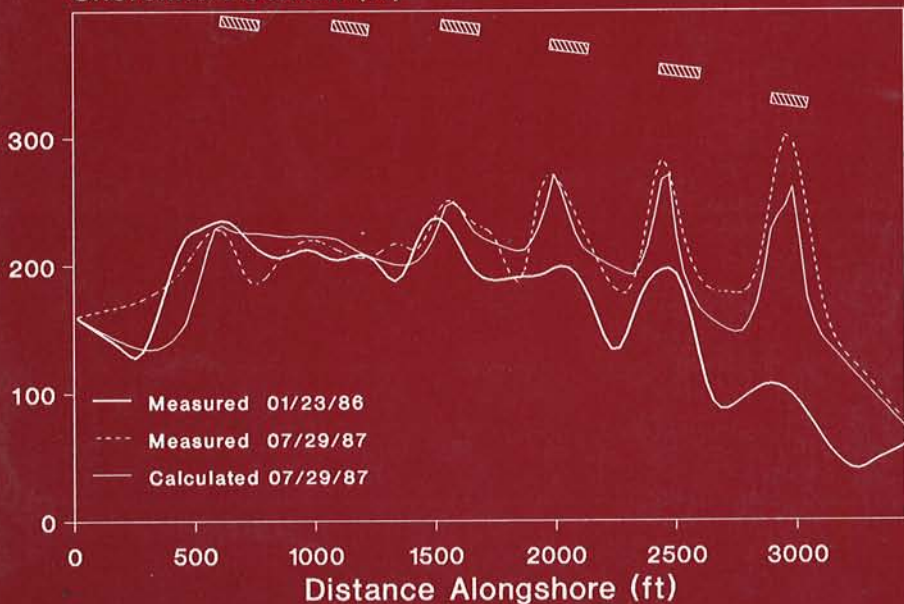


# COASTAL SEDIMENTS

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'91  
VOLUME I

Shoreline Position (ft)



## FOREWORD

COASTAL SEDIMENTS '91 was organized as a technical specialty conference devoted to the physical aspects of sediment processes in the coastal environment. Following in the tradition of previous conferences in the coastal sediments series that were held in 1977 and 1987, COASTAL SEDIMENTS '91 was designed to promote a broad exchange of information and views among specialists in the fields of coastal engineering, geology, oceanography, and related disciplines. The subtitle of COASTAL SEDIMENTS '91 was "Quantitative Approaches to Coastal Sediment Processes," which set the tone of the conference and determined the composition of the papers that were presented. Participants were warmed up to this theme by the Keynote Address "Quantifying Coastal Sediment Processes: A Challenge for the 90's and Beyond," given by Ole Secher Madsen of the Massachusetts Institute of Technology. The conference schedule was organized under three general themes as (1) Fundamentals of Coastal Sediment Transport Processes, (2) Coastal Geologic Processes, and (3) Engineering Applications. Approximately equal numbers of papers were presented under each theme in three or four parallel sessions, and these two *Proceedings* volumes are a permanent record and valuable source of information on quantitative approaches to coastal sediment processes ranging from basic research to engineering applications.

"The Role of Long Waves on Coastal Sediment Processes" was examined by a panel and discussed in a plenary session of conference attendees; submission of papers on this subject was encouraged as a means of promoting research to evaluate this relatively unknown phenomenon and the implications of long waves in coastal engineering applications. In addition, the conference was preceded by a one-day workshop entitled "Development and Applications of Cross-Shore Sediment Transport and Beach Profile Change Models," reflecting the enormous progress that has recently been made in understanding and quantifying beach profile change, particularly during storms. Therefore, these *Proceedings* also provide valuable information on the most recent results in cross-shore sediment transport processes from a wide range of approaches and viewpoints not found elsewhere in the literature in both quality and breadth.

Nearly 300 abstracts were submitted to the Conference Committee, of which 170 were accepted for development into full papers and presentation over three days of technical sessions. Approximately one-third of the papers appearing in these *Proceedings* originated from specialists in 20 countries other than the United States, demonstrating that COASTAL SEDIMENTS '91 was an extremely popular and truly international conference. Each paper accepted for inclusion in these *Proceedings* received two positive peer reviews. Each paper is eligible for discussion in the *Journal of Waterway, Port, Coastal and Ocean Engineering* and is eligible for ASCE awards.

The Conference Committee gratefully acknowledges the assistance of many individuals, some known, some unknown, some anonymous, and some, alas, forgotten in the incredible two-year rush by an all-volunteer committee. Day-to-day assistance with the conference data base and accurate execution of many details, all of great importance, were provided by ASCE members Mary Cialone and Julie Dean Rosati at "conference headquarters" located at the Coastal Engineering Research Center (CERC). Gail Ashley (Rutgers University) again did a great

job as SEPM liaison in arranging for organization of three SEPM-sponsored technical sessions, including the John C. Kraft celebration technical session. Mark Gravens and Norman Scheffner (Both of CERC) assisted at various critical stages in processing and accounting for manuscripts strewn around the conference chairman's office.

Numerous individuals located around the continent assisted the Conference Committee in review and cross-reviews of abstracts and final papers. To the following individuals by name and those anonymous or not recorded, we express our appreciation for your thoughtful and careful efforts: James Baillard, Reginald Beach, Mark Byrnes, David Cannon, Ian Collins, William Dally, Guy Gelfenbaum, John Haines, Steven Hughes, Shaun Hsu, Craig Leidersdorf, John Lesnick, Jeffrey List, Robert Nathan, Alan Niedoroda, Marc Perlin, Julie Dean Rosati, William Seabergh, William Seelig, Joan Oltman-Shay, Jacob van de Kreeke, Todd Walton, and Harry Yeh.

The conference technical content and color were greatly enhanced by volunteer and "volunteered" session organizers, to whom we express our appreciation. Many session organizers also assisted in abstract and paper reviews. These individuals and their sessions were: Keith Bedford and Ole Secher Madsen, Fundamentals of Coastal Sediment Transport; Julian D. Orford and Donald L. Forbes, Coarse Clastic Beaches; William A. Birkemeier and Timothy Kana, Hurricane Hugo; Kevin R. Bodge and Paul D. Komar, Longshore Sediment Transport; Stephen P. Leatherman and Robert A. Morton, Mapping Shoreline Change: Techniques and Errors; Choule Sonu and Arthur T. Shak, Sediment and Structure Interaction, I; Shea Penland and S. Jeffress Williams, Geologic Framework and Coastal Processes: Northern Gulf of Mexico; Hans Hanson and Alan H. Brampton, Shoreline and Beach Change Modeling; Suzette M. Kimball and Karen E. Ramsey, Current Trends and Rates of Relative Sea Level Change; Michael J. Chrzastowski and Charles H. Fletcher, Coastal Sedimentary Response to Sea Level Rise; David L. Kriebel and Marcel J. F. Stive, Cross-Shore Sediment Transport Modeling, I; Thomas F. Moslow and Duncan M. FitzGerald, Inlets, I; and Craig H. Everts, Sediment Budget Analysis, I.

Special thanks to Michael J. Chrzastowski and Charles H. Fletcher for arranging and coordinating a variety of activities designed to celebrate John C. Kraft's contributions to coastal geology. Included were a special technical session and a canoeing field trip at Grays Harbor.

The Conference Committee also appreciates the positive replies to our call for participation in the panel session on "Role of Long Waves in Coastal Sediment Processes" by Paul D. Komar (Moderator) and panel session members Anthony J. Bowen, Robert G. Dean, Robert T. Guza, and Richard W. Sternberg.

We also thank all session moderators for agreeing to lend their time and experience to run the conference smoothly and productively. We are indebted to the tour organizers and their organizations for arranging and conducting memorable and stimulating technical trips: EDIZ HOOK FIELD TRIP—A. David Schuldt and Eric E. Nelson, both of the Corps of Engineers, Seattle District; GRAYS HARBOR FIELD TRIP—Brian F. Atwater, U.S. Geological Survey; Joanne Bourgeois, University of Washington; and James Phipps, Grays Harbor College.

Finally, we thank Elizabeth Yee and Julie Taylor, ASCE Conference Management Group, for their dedication and guidance in planning and conducting this remarkable conference that is so precious to all of us, and Shiela Menaker, ASCE Publications, for assisting with arrangements for publication of these *Proceedings*.

**CONFERENCE COMMITTEE**

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