

are papers on nonlinear energy transfer between random waves and the interaction between ripples and long waves. There are three papers on wind/wave interaction including the effect of a surfactant and an interesting paper on an experimental study of wind generated wave statistics (Huang, Long and Bli-ven). The section concludes with two papers on finite depth wind waves.

"Wave Propagation" contains papers on the results of a wave dynamics experiment (WAVDYN), the transformation of the statistical properties of waves propagating into shallow water and experimental studies of the velocity field and dispersion.

"Wave Instabilities and Breaking" begins with a review of dynamics of wave breaking (Longuet-Higgins). Then follow papers on experimental studies of strong nonlinear interactions, breaking in wave trains, measurement of breaking waves and the statistics of breaking waves. There are papers on microwave scattering from breaking waves, the influence of breaking waves on upper ocean dynamics and the stability of capillary waves.

In his keynote address Sir George Deacon describes the measurement of air pressures close to the ocean surface as one of the hard core problems. The three papers in "Air Flow Over Waves" tackle aspects of this problem. There are papers on experiments measurements of the pressure distribution over broken and unbroken waves, flow separation over short waves in a laboratory tank and measurements of wave induced pressure over waves in the North Sea.

In "Methods of Remote Sensing" papers by Harger and Hasselmann & Alpers tackle the vexed question of Synthetic Aperture Radar (SAR) imaging theory. There are papers on the performance of the SEASAT SAR in the JASIN experiment and the limitations of SAR in high sea states. The section concludes with two papers on microwave radar experiments and a paper on the visibility of rms sea surface slope.

"Sea Surface measurements" contains seven papers describing particular experiments on wind and wave measurements. These include SEASAT altimeter measurements over the Southern Ocean, five papers on different microwave radar experiments and a paper on the passive microwave radiation characteristics of a roughened sea.

The "Wave Modeling" section opens with a theoretical treatment on estimating the full two dimensional wave spectrum from the statistical observations using inverse methods

(Long). There are three papers on particular models in use and these papers will be complimentary to the results of the SWAMP Group presented at the same symposium but published as a separate volume (Plenum Press 1985). There are papers on the anomalous dispersion effects in numerical models, the performance of waverider buoys and the performance of wave models for hurricane winds.

The editors state in their preface that "Many important questions remain but it is to be hoped that the advances described in this book will serve as a timely summary of the state of the art that will be of interest to oceanographers, ocean engineers and meteorologists and will, at the same time, reset the stage for future directions of research." With the wealth of material contained in this volume the editors aims have been achieved.

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**Coast Dune Management Guide**, D. S. Ranwell and Rosalind Boar, 1986, Institute of Terrestrial Ecology, Abbots Ripton, Huntingdon, Price £6.95 105p., ISBN 0-904282-93-7 (soft-cover).

This book's objective is to provide coastal engineers with information about using vegetation to promote dune growth and to provide protection against coastal erosion and flooding. The book is divided into five sections. Section One deals with the physics of eolian sand movement and the influence of vegetation on causing sediment accumulation. The effects of wave and wind erosion on a dune are also discussed, as are various characteristics of the dune environment. The section closes with a classification of dune systems along the British coastline.

Section Two deals with human uses of the beach/dune system and with the impacts of those uses on coast protection. Practices discussed include mining, recreation, wildlife habitat, grazing, cultivation, transportation, industry and housing. Techniques for using vegetation in dune protection projects are reviewed in Section Three. The Section begins with a discussion of problems associated with coastal dune systems, including sand supply and vegetation damage. Standard beach protection techniques are discussed next with specific reference to the way in which they affect vegetation and dune growth. The Section ends with

a description of the types of plants found in the dune zone and a review of planting techniques.

The fourth Section presents the results of five case studies in which dune building techniques were employed. In each case, the physiographic layout is described, the problem is identified and the solution adopted is presented. The final Section deals with managing coastal dune systems. Controlled public access and education are advocated in order to reduce human impacts in dune systems. Careful planning is suggested as a way of minimizing impacts and of implementing coastal protection projects.

There are several appendices which present information about using signs, about off-road vehicle use, about vegetation planting techniques and about using fertilizers to promote vegetation growth. Most of this information is reprinted from other sources.

The book's strengths center on the presentation of information about the use of vegetation to promote dune growth and on the discussion of human uses of the dune zone. A great amount of information exists about the use of vegetation and/or fences to build dunes and about rates of dune growth under controlled conditions. Although a limited amount of this information is presented here, the material on this subject presented in the appendices is a useful complement to that discussed in the text.

The presentation of eolian geomorphological processes and responses is weak, especially regarding the interrelation between beach and dune systems. One is given the impression that dune erosion represents a temporary setback to the system that can be reversed by encouraging

dune growth. There is little discussion of the effects of a negative sediment budget and rising sea level on changes in the beach/dune profile. The discussion of management practices does not refer to any basic management theories or models. Although this information might be too conceptual for this book, advocating careful planning seems too simplistic.

Coastal scientists will find little new information in this text and engineers with a solid background in coastal engineering will derive little benefit from referring to the book. There are other texts that present similar information in more detail and more clearly. Persons interested in coastal problems are encouraged to read the section on human uses of the dune zone, as this provides the reader with an idea of how far-ranging those uses are and how damaging they can be.

This book does fulfill its goal of providing British coastal engineers with applicable information about vegetation use in dune building, but the discussion lacks detail. If the book's audience consists of town engineers who are responsible for coping with local erosion or flooding problems, the very simplified discussion may be appropriate. It seems likely that the engineer will still need to refer to a specialist when time comes to select and implement specific techniques. This book, at least, will enable the engineer to recognize that such a referral is necessary.

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## BOOKS RECEIVED

**Zunica, M., 1987.** *Lo Spazio Costiero Italiano*. Rome: Valerio Levi Editore, 212p.

**Holm, N.P., 1987.** Inventory of Lake Michigan Research Projects 1984-1987. Urbana: Illinois Department of Energy and Natural Resources, *Environmental Geology Notes 121*, 423p. \$US5.00.

**Bottin, R.R., Jr., 1988.** Case Histories of Corps Breakwater and Jetty Structures. Waterways Experiment Station, Corps of Engineers (Vicksburg, MS 39180). *Technical Report REMR-CO-3*.

**Carver, R.D.; Wright, and B.J., 1988.** Stability of Dolos and Tribvar Overlays for Reha-