



Water wave mechanics for engineers and scientists.

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Civil and Environmental Engineering

Research output: Chapter in Book/Report/Conference proceeding > Chapter

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Abstract

This book is aimed at final year undergraduates or postgraduates. Problems are included and supporting experiments for laboratory courses are outlined. Chapter 1 introduces wave mechanics while Chapter 2 provides a review of hydrodynamics and vector analysis. Chapter 3 deals with small amplitude water wave theory formulation and solution, with aspects of relevance to coastal engineering (e.g. water particle kinematics, wave transformation) covered in Chapter 4. Chapter 5 studies long wave phenomena such as one dimensional tides, storm surges, seiches. Chapter 6 investigates wavemaker theory and wave tank design with the use of wave statistics and spectra explored in Chapter 7. Chapter 8 examines wave forces (on structures) and Chapter 9 studies waves over real sea beds. Chapters 10 and 11 deal with nonlinear properties and nonlinear waves. (C.J.U.)

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