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   Soggetti   Ocean wave power
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   Sommario/riassunto   Numerical Modelling of Wave Energy Converters: State-of-the Art
                             Techniques for Single WEC and Converter Arrays presents all the
                             information and techniques required for the numerical modelling of a
                             wave energy converter together with a comparative review of the
                             different available techniques. The authors provide clear details on the
                             subject and guidance on its use for WEC design, covering topics such
                             as boundary element methods, frequency domain models, spectral
                             domain models, time domain models, non linear potential flow models,
                             CFD models, semi analytical models, phase resolving wave propagation
                             models, phase averaging wave propagation models, parametric design
                             and control optimization, mean annual energy yield, hydrodynamic
                             loads assessment, and environmental impact assessment. Each chapter
                             starts by defining the fundamental principles underlying the numerical
                             modelling technique and finishes with a discussion of the technique's
                             limitations and a summary of the main points in the chapter. The
                             contents of the chapters are not limited to a description of the
                             mathematics, but also include details and discussion of the current
                             available tools, examples available in the literature, and verification,

validation, and computational requirements. In this way, the key points of each modelling technique can be identified without having to get deeply involved in the mathematical representation that is at the core of each chapter. The book is separated into four parts. The first two parts deal with modelling single wave energy converters; the third part considers the modelling of arrays; and the final part looks at the application of the different modelling techniques to the four most common uses of numerical models. It is ideal for graduate engineers and scientists interested in numerical modelling of wave energy converters, and decision-makers who must review different modelling techniques and assess their suitability and output. Consolidates in one volume information and techniques for the numerical modelling of wave energy converters and converter arrays, which has, up until now, been spread around multiple academic journals and conference proceedings making it difficult to access Presents a comparative review of the different numerical modelling techniques applied to wave energy converters, discussing their limitations, current available tools, examples, and verification, validation, and computational requirements Includes practical examples and si...