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Nota di contenuto	Preface -- Viscous-Flow Calculations for Model and Full-Scale Current Loads on Typical Offshore Structures, by A.H. Koop, C.M. Klaij and G. Vaz -- An Absorbing Boundary Condition for Regular and Irregular Wave Simulations, by B. Duz, R.H. Huijsmans, A.E. Veldman, M.J. Borsboom and P.R. Wellens -- Free-Surface Flow and Fluid-Object Interaction, by I. Akkerman,K. Benner, and Y. Bazilevs;The Particle Finite Element Method (PFEM). An Effective Numerical Technique for Solving Marine, Naval and Harbour Engineering Problems, by E. Oñate, S.R. Idelsohn, M.A. Celigueta and B. Suárez -- Shape-Newton Method forIsogeometric Discretizations of Free-Boundary Problems, by K.G. van der Zee, G.J. van Zwieten, C.V. Verhoosel, and E.H. van Brummelen -- Enabling Computational Methods for Offshore Wind Turbines, by Y. Bazilevs, M.-C. Hsu, I. Akkerman, and D.J. Benson -- Advances in the Development of a Time-domain Unstructured Finite Element Method for the Analysis of Waves and Floating Structures Interaction, by B. Serván-Camas and J. García-Espinosa -- The Variation in Wake Structure of a Tidal Stream Turbine with Flow Velocity, by R. Malki, I. Masters, A.J. Williams and N. Croft -- Viscous-Flow Calculations for KVLCC2 in Deep and Shallow Water, by S. Toxopeus -- Computational Investigation of Non-Body-of-Revolution Hull Form Maneuvering Characteristics, by K. Delaney -- Numerical Prediction of Erosive Collapse Events in Unsteady Compressible Cavitating Flows, by M.S.

Mihatsch, S.J. Schmidt, M. Thalhamer and N.A. Adams -- Numerical and Experimental Investigation into Propulsion and Cavitation Performance of Marine Propeller, by N. Hasuike, S. Yamasaki and J. Ando -- Advanced Lagrangian Approaches to Cavitation Modelling in Marine Applications, by S. Yakubov, B. Cankurt, T. Maquil, P. Schiller, M. Abdel-Maksoud and T. Rung -- CFD in Ship Hydrodynamics - Results of the Gothenburg 2010 Workshop, by L. Larsson, F. Stern and M. Visonneau -- Prediction of the Transom Flow Regime with Viscous Free Surface Computations, by A. van der Ploeg and A.R. Starke -- Anisotropic Mesh Refinement in Ship Flow Simulation with Free Surface, by J. Wackers, G.B. Deng and M. Visonneau.

Sommario/riassunto

This book contains selected papers from the Fourth International Conference on Computational Methods in Marine Engineering, held at Instituto Superior Técnico, Technical University of Lisbon, Portugal in September 2011. Nowadays, computational methods are an essential tool of engineering, which includes a major field of interest in marine applications, such as the maritime and offshore industries and engineering challenges related to the marine environment and renewable energies. The 2011 Conference included 8 invited plenary lectures and 86 presentations distributed through 10 thematic sessions that covered many of the most relevant topics of marine engineering today. This book contains 16 selected papers from the Conference that cover “CFD for Offshore Applications”, “Fluid-Structure Interaction”, “Isogeometric Methods for Marine Engineering”, “Marine/Offshore Renewable Energy”, “Maneuvering and Seakeeping”, “Propulsion and Cavitation” and “Ship Hydrodynamics”. The papers were selected with the help of the recognized experts that collaborated in the organization of the thematic sessions of the Conference, which guarantees the high quality of the papers included in this book. .