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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Flow scales in cross flow turbines -- Numerical study of 2D vertical axis wind and tidal turbines with a degree-adaptive hybridizable discontinuous Galerkin method -- A MLS-based high-order-preserving sliding mesh technique with no intersections -- Vertical-axis wind turbine start-up modelled with a high-order numerical solver -- Large-Eddy Simulation of a Vertical Axis Tidal Turbine using an Immersed Boundary Method -- Computational Study of the Interaction between Hydrodynamics and Rigid Body Dynamics of a Darrieus Type H Turbine -- The physics of starting process for vertical axis wind turbines -- Hybrid mesh deformation tool for offshore wind turbines aeroelasticity prediction -- Numerical Simulation of Wave Loading on Static Offshore Structures -- MLS-based selective limiting for Shallow Waters Equations -- A Comparison of Panel Method and RANS Calculations for a Horizontal Axis Marine Current Turbine.

Sommario/riassunto

The book encompasses novel CFD techniques to compute offshore wind and tidal applications. Computational fluid dynamics (CFD) techniques are regarded as the main design tool to explore the new engineering challenges presented by offshore wind and tidal turbines for energy generation. The difficulty and costs of undertaking experimental tests in offshore environments have increased the interest in the field of CFD which is used to design appropriate turbines and blades, understand fluid flow physical phenomena associated with offshore environments, predict power production or characterise offshore environments, amongst other topics.