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Altri autori (Persone)	HechtMatthew W HasumiHiroyasu
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Nota di contenuto	Title Page; Contents; Preface; Introduction: Ocean Modeling-Eddy or Not; Section 1: Oceanographic Processes and Regimes: Fundamental Question; The Nature and Consequences of Oceanic Eddies; Submesoscale Processes and Dynamics; Gulf Stream Separation in Numerical Ocean Models; Eddy-Resolving Modeling of Overflows; High-Frequency Winds and Eddy-Resolving Models; Resolution Dependence of Eddy Fluxes; Eddies and Upper-Ocean Nutrient Supply; Eddies in Eastern Boundary Subtropical Upwelling Systems; Section 2: Ocean Dynamics and State: From Region to Global Scale The Fidelity of Ocean Models With Explicit EddiesCommon Success and Failure in Simulating the Pacific Surface Currents Shared byFour High-Resolution Ocean Models; Eddies in Numerical Models of the Southern Ocean; High-Resolution Indian Ocean Simulations- Recent Advances and Issues From OFES; Toward a Physical Understanding of the North Atlantic: A Review of Model Studies in an Eddying Regime; Towards Eddy-Resolving Models of the Arctic Ocean; Pacific Upper Ocean Response to Global Warming-Climate Modelingin an Eddying Ocean Regime

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Sommario/riassunto	Published by the American Geophysical Union as part of the Geophysical Monograph Series, Volume 177.This monograph is the first to survey progress in realistic simulation in a strongly eddying regime made possible by recent increases in computational capability. Its contributors comprise the leading researchers in this important and constantly evolving field. Divided into three parts Oceanographic Processes and Regimes: Fundamental QuestionsOcean Dynamics and State: From Regional to Global Scale, andModeling at the Mesoscale: State of the Art a