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Nota di contenuto	Contents; Foreword; Preface; 1. A Brief Introduction to Vortex Dynamics and Turbulence H. Keith Moffatt; 1. Introduction; 2. Vorticity and the Biot-Savart Law; 3. The Euler Equation and its Invariants; 4. The Stretched Vortex of Burgers (1948); 5. Kelvin-Helmholtz Instability; 6. Transient Instability and Streamwise Vortices; 7. Turbulence, Viewed as a Random Field of Vorticity; 8. The Kolmogorov-Obukhov Energy-Cascade Theory; Acknowledgments; References; 2. Geophysical and Environmental Fluid Dynamics Tieh-Yong Koh and Paul F. Linden; 1. Introduction; 2. Stratified Flows 2.1. Surface Gravity Waves2.1.1. Dimensional analysis; 2.1.2. Exact

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3. Paleotempestology

Sommario/riassunto

The Institute for Mathematical Sciences at the National University of Singapore hosted a Spring School on Fluid Dynamics and Geophysics of Environmental Hazards from 19 April to 2 May 2009. This volume contains the content of the nine short lecture courses given at this School, with a focus mainly on tropical cyclones, tsunamis, monsoon flooding and atmospheric pollution, all within the context of climate variability and change. The book provides an introduction to these topics from both mathematical and geophysical points of view, and will be invaluable for graduate students in applied mathem