

Atmospheric And Oceanic Fluid Dynamics

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Graduate textbook on atmospheric and oceanic fluid dynamics for meteorology, atmospheric science and oceanography courses. Fluid dynamics is fundamental to our understanding of the atmosphere and oceans. Although many of the same principles of fluid dynamics apply to both the atmosphere and oceans, textbooks tend to concentrate on the atmosphere, the ocean, or the theory of geophysical fluid dynamics (GFD). This textbook provides a comprehensive unified treatment of atmospheric and oceanic fluid dynamics. The book introduces the fundamentals of geophysical fluid dynamics, including rotation and stratification, vorticity and potential vorticity, and scaling and approximations. It discusses baroclinic and barotropic instabilities, wave-mean flow interactions and turbulence, and the general circulation of the atmosphere and ocean. Student problems and exercises are included at the end of each chapter.

Atmospheric and Oceanic Fluid Dynamics: Fundamentals and Large-Scale Circulation will be an invaluable graduate textbook on advanced courses in GFD, meteorology, atmospheric science and oceanography, and an excellent review volume for researchers. Additional resources are available at cambridge.org/9780521849692. EAN/ISBN : 9780511345906 Publisher(s): Cambridge University Press
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