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Autore	Mak Mankin <1939->
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Descrizione fisica	1 online resource (xiv, 486 pages) : digital, PDF file(s)
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Nota di contenuto	Machine generated contents note: 1. Fundamental concepts and physical laws; 2. Basic approximations and elementary flows; 3. Vorticity and potential vorticity dynamics; 4. Friction and boundary layers; 5. Fundamentals of wave dynamics; 6. Quasi-geostrophic theory and two-layer model; 7. Dynamic adjustment; 8. Instability theories; 9. Stationary planetary wave dynamics; 10. Wave-mean flow interaction; 11. Equilibration dynamics of baroclinic waves; 12. Nongeostrophic dynamics; Appendix A. Mathematical tools; Appendix B. A brief survey of related books; References; Index.
Sommario/riassunto	Mankin Mak's textbook provides a self-contained course on atmospheric dynamics. The first half is suitable for senior undergraduates, and develops the physical, dynamical and mathematical concepts at the fundamental level. The second half of the

book is aimed at more advanced students who are already familiar with the basics. The contents have been developed from many years of the author's teaching at the University of Illinois. Discussions are supplemented with schematics, weather maps and statistical plots of the atmospheric general circulation. Students often find the connection between theoretical dynamics and atmospheric observation somewhat tenuous, and this book demonstrates a strong connection between the key dynamics and real observations. This textbook is an invaluable asset for courses in atmospheric dynamics for advanced students and researchers in atmospheric science, ocean science, weather forecasting, environmental science, and applied mathematics. Some background in mathematics, physics and basic atmospheric science is assumed.

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