Record Nr. UNINA9910781969403321 Autore Lamb Dennis <1941-> Titolo Physics and chemistry of clouds // Dennis Lamb, Johannes Verlinde [[electronic resource]] Cambridge: ,: Cambridge University Press, , 2011 Pubbl/distr/stampa 1-107-08664-7 **ISBN** 1-107-21966-3 1-62870-283-4 1-283-38394-2 1-139-18933-6 9786613383945 1-139-18803-8 1-139-19063-6 1-139-18341-9 1-139-18572-1 0-511-97637-2 Descrizione fisica 1 online resource (xiv, 584 pages) : digital, PDF file(s) Classificazione SCI042000 Disciplina 551.57/6 Soggetti Clouds - Dynamics Atmospheric physics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Title from publisher's bibliographic system (viewed on 05 Oct 2015). Includes bibliographical references (p. 562-567) and index. Nota di bibliografia Nota di contenuto 1. Introduction; 2. The atmospheric setting; 3. Equilibria; 4. Change; 5. Cloud thermodynamics; 6. Cloud formation and evolution; 7. Nucleation; 8. Growth from the vapor; 9. Growth by collection; 10. Evolution of supersaturation; 11. Warm clouds; 12. Cold clouds; 13. Cloud chemistry; 14. Electrification; Appendix A. Cloud classification; Appendix B. Basics of thermodynamics; Appendix C. Boltzmann distribution: Index. Clouds affect our daily weather and play key roles in the global climate. Sommario/riassunto Through their ability to precipitate, clouds provide virtually all of the fresh water on Earth and are a crucial link in the hydrologic cycle. With ever-increasing importance being placed on quantifiable predictions -

from forecasting the local weather to anticipating climate change - we must understand how clouds operate in the real atmosphere, where interactions with natural and anthropogenic pollutants are common. This textbook provides students - whether seasoned or new to the atmospheric sciences - with a quantitative yet approachable path to learning the inner workings of clouds. Developed over many years of the authors' teaching at Pennsylvania State University, Physics and Chemistry of Clouds is an invaluable textbook for advanced students in atmospheric science, meteorology, environmental sciences/engineering and atmospheric chemistry. It is also a very useful reference text for researchers and professionals.