Record Nr. UNINA9910813298603321 Autore North Gerald R Titolo Atmospheric thermodynamics: elementary physics and chemistry / / Gerald R. North and Tatiana L. Erukhimova Cambridge, UK;; New York,: Cambridge University Press, 2009 Pubbl/distr/stampa **ISBN** 1-107-20245-0 1-282-53936-1 9786612539367 0-511-71903-5 0-511-71948-5 0-511-51549-9 0-511-71857-8 0-511-60969-8 0-511-51677-0 Edizione [1st ed.] Descrizione fisica 1 online resource (xi, 267 pages) : digital, PDF file(s) ErukhimovaTatiana L Altri autori (Persone) Disciplina 551.522 Soggetti Atmospheric thermodynamics **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). Nota di bibliografia Includes bibliographical references (p. 263-264) and index. Nota di contenuto Introductory concepts -- Gases -- First Law of Thermodynamics --Second Law of Thermodynamics -- Air and water -- Profiles of the atmosphere -- Thermodynamic charts -- Thermochemistry --Thermodynamic equation -- Appendix A: Units and numerical values of constants -- Appendix B: Notation and abbreviations -- Appendix C: Answers for selected problems. Sommario/riassunto This textbook presents a uniquely integrated approach in linking both physics and chemistry to the study of atmospheric thermodynamics. The book explains the classical laws of thermodynamics, focuses on various fluid systems, and, recognising the increasing importance of chemistry in the meteorological and climate sciences, devotes a chapter

to chemical thermodynamics which includes an overview of photochemistry. Although students are expected to have some

background knowledge of calculus, general chemistry and classical physics, the book provides set-aside refresher boxes as useful reminders. It contains over 100 diagrams and graphs to supplement the discussions, and a similar number of worked examples and exercises, with solutions included at the end of the book. It is ideal for a single-semester advanced course on atmospheric thermodynamics, and will prepare students for higher-level synoptic and dynamics courses.