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Nota di contenuto	Part I. Ground-based remote sensing. 1. Weather radars -- 2. Tropical storms -- 3. Mid latitude storms -- 4. Thunderstorms -- 5. Tornadoes -- 6. Cloud radars -- Part II. Spaceborne remote sensing. 7. Remote sensing of clouds: potential and limitations -- 8. Water vapor estimation from satellite microwave sensors -- 9. TRMM -- 10. GPM -- 11. Clouds and water vapor from MODIS and VIIRS -- 12. CloudSat and CALIPSO -- 13. Observations of Arctic clouds -- 14. The future of cloud systems observations -- 15. Advances in cloud modeling.
Sommario/riassunto	This book presents current applications of remote sensing techniques for clouds and precipitation for the benefit of students, educators, and scientists. It covers ground-based systems such as weather radars and spaceborne instruments on satellites. Measurements and modeling of precipitation are at the core of weather forecasting, and long-term observations of the cloud system are vital to improving atmospheric models and climate projections. The first section of the book focuses

on the use of ground-based weather radars to observe and measure precipitation and to detect and forecast storms, thunderstorms, and tornadoes. It also discusses the observation of clouds using ground-based millimeter radar. The second part of the book concentrates on spaceborne remote sensing of clouds and precipitation. It includes cases from the Tropical Rainfall Measuring Mission (TRMM) and the Global Precipitation Measurement (GPM) mission, using satellite radars to observe precipitation systems. Then, the focus is on global cloud observations from the ClaudSat, Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO), including a perspective on the Earth Clouds, Aerosols, and Radiation Explorer (EarthCARE) satellite. It also addresses global atmospheric water vapor profiling for clear and cloudy conditions using microwave observations. The final part of this volume provides a perspective into advances in cloud modeling using remote sensing observations.