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Descrizione fisica	1 online resource (xiv, 392 pages) : digital, PDF file(s)
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Soggetti	Precipitation (Meteorology) - Measurement Cloud forecasting Precipitation forecasting
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	; Preface; Chapter 1: Introduction -- ; Chapter 2: Foundations of microphysical parameterizations -- ; Chapter 3: Cloud-droplet and cloud-ice crystal nucleation -- ; Chapter 4: Saturation adjustment -- ; Chapter 5: Vapor diffusion growth of liquid-water drops -- ; Chapter 6: Vapor diffusion growth of ice-water crystals and particles -- ; Chapter 7: Collection growth -- ; Chapter 8: Drop breakup -- ; Chapter 9: Autoconversions and conversions -- ; Chapter 10: Hail growth -- ; Chapter 11: Melting of ice -- ; Chapter 12: Microphysical parameterization problems and solutions -- ; Chapter 13: Model dynamics and finite differences -- ; Appendix; References; Index.
Sommario/riassunto	This book focuses specifically on bin and bulk parameterizations for

the prediction of cloud and precipitation at various scales - the cloud scale, mesoscale, synoptic scale, and the global climate scale. It provides a background to the fundamental principles of parameterization physics, including processes involved in the production of clouds, ice particles, liquid water, snow aggregate, graupel and hail. It presents full derivations of the parameterizations, allowing readers to build parameterization packages, with varying levels of complexity based on information in the book. Architectures for a range of dynamical models are given, in which parameterizations form a significant tool for investigating large non-linear numerical systems. Model codes are available online at www.cambridge.org/9780521883382. Written for researchers and advanced students of cloud and precipitation microphysics, this book is also a valuable reference for all atmospheric scientists involved in models of numerical weather prediction.
