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Titolo	An Introduction to Lightning / / by Vernon Cooray
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2015
ISBN	9789401789387 940178938X
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Descrizione fisica	1 online resource (XV, 386 p. 253 illus., 71 illus. in color.)
Disciplina	551.5632
Soggetti	Atmospheric science Meteorology Geophysics Atmospheric Sciences Geophysics and Environmental Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Lightning and Humans: The Early Days -- Basic Physics of Electrical Discharges -- Basic Electromagnetic Theory -- Earth's Atmosphere -- The Thundercloud and Lightning Phenomenology -- Mechanism of Charge Generation in Thunderclouds -- Mechanism of the Lightning Flash -- Features of Electrical Currents in Lightning Flashes -- Electric and Magnetic Fields of Lightning Flashes -- Lightning Return Stroke Models -- Lightning Return Stroke Speed -- Propagation Effects on Lightning Generated Electromagnetic Fields -- Lightning Location -- Potential of the Thundercloud and the Charge Distribution in Leaders and Return Strokes -- Direct and Indirect Effects of Lightning -- Interaction of Lightning Flashes with Humans -- Principles of Lightning Protection -- Advanced Procedures to Locate the Point of Attachment of Lightning Flashes -- Interaction of Lightning Flashes and Thunderclouds with the Earth's Atmosphere -- Unusual Forms of Lightning -- Appendix A: How to Avoid Lightning Injuries Including Questions and Answers -- Appendix B: Advanced books on Lightning for further reading.
Sommario/riassunto	This book about lightning summarizes the essence of physics and effects of lightning in a non-technical manner and provides an up-to-

date description of the phenomenon of lightning in simple language. Starting with the myths related to lightning, the reader is introduced to the mechanism of lightning flashes and their interactions with humans, human-made systems and Earth's environment. Most of the available books on lightning are written for the experts in the field and there is a need for a book that introduces the undergraduate and beginning post graduate students to the subject of lightning and prepares them for more advanced books meant for the experts. This introductory book, which is based on a series of lectures given to undergraduate and postgraduate students in electrical engineering, is intended to fill this need. Tailored to the needs of university students who plan to study electrical engineering, meteorology, environmental or basic physics, it is also a valuable reference resource for laymen who are interested in knowing more on this phenomenon.
