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Titolo	From Ultra Rays to Astroparticles [[electronic resource]] : A Historical Introduction to Astroparticle Physics / / edited by Brigitte Falkenburg, Wolfgang Rhode
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2012
ISBN	1-283-94559-2 94-007-5422-1
Edizione	[1st ed. 2012.]
Descrizione fisica	1 online resource (344 p.)
Disciplina	523.0197 523.01972
Soggetti	Astrophysics Physics Astronomy Astrophysics and Astroparticles History and Philosophical Foundations of Physics Astronomy, Astrophysics and Cosmology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	1 Introduction.- -- 2 From the discovery of radioactivity to first accelerator experiments.- 3 Development of Cosmology:From a Static Universe to Accelerated Expansion.- 4 Evolution of Astrophysics5.1 Introduction and General Overview -- 5 Development of Ultra High-Energy Cosmic Ray Research -- 6 Very-High Energy Gamma-Ray Astronomy.- 7 Search for the neutrino mass and low energy neutrino astronomy.- 8 From Particle Physics to Astroparticle Physics: Proton Decay and the Rise of Non-Accelerator Physics -- 10 From Waves to Particle Tracks and Quantum Probabilities.- A Timetable -- B Nobel prizes -- C Textbooks -- C.1 Textbooks 1987–2012 -- C.2 Textbooks 1962–1986 -- C.3 Textbooks 1937–1961 -- C.4 Textbooks 1912–1936 -- D Books in History of Physics.
Sommario/riassunto	The book is a historical introduction to astroparticle physics. Its scope is to give an overview of this complex field of research, starting with the discovery of cosmic rays (Victor Hess, 1912) until the current

experiments with particle telescopes. The book focuses on the ways in which physics changes in the course of this history. The following changes run parallel, overlap, and/or interact: - Discovery of effects like X-rays, radioactivity, cosmic rays, new particles, the Cosmic Microwave Background and its anisotropies, but also progress through non-discoveries (monopoles) etc. - The change of the description of nature in physics, as consequence of the scientific revolutions at the beginning of the 20th century, giving rise to quantum physics, relativity, etc. - The shifts from particle physics to cosmology and to particle physics with cosmic accelerators. - The change of experimental methods, cooperations, and disciplinary divisions. With regard to the latter change, a main topic of the book is to make the specific multi-disciplinary features of astroparticle physics clear to undergraduate and graduate students, historians of physics, and philosophers of science.