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Collana	Atlantis Studies in Astroparticle Physics and Cosmology, , 1879-6931 ; ; 1
Disciplina	523.01
Soggetti	Astrophysics Cosmology Plasma (Ionized gases) Mathematical physics Plasma Physics Theoretical, Mathematical and Computational Physics
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1.Electroweak Interactions and Neutrinos -- 2.The Fundamental Gauge Interactions and Their Description -- 3.The Universe between Today and First Light -- 4.The Early Universe before First Light -- 5.Detection Techniques and Experimental Results -- 6.Cosmic Ray Sources and Acceleration -- 7.Cosmic Ray Propagation -- 8.Electromagnetic Radiation in Astrophysics -- 9.High Energy Extraterrestrial Neutrino Fluxes and Their Detection -- 10.Neutrino Properties -- 11.Neutrino Oscillations -- 12.Neutrino Properties and their Role in Astrophysics and Cosmology -- 13.Weak Gravitational Fields and Gravitational Waves -- 14.Dark Matter -- 15.New Light and Heavy Matter States and Their Role in Astrophysics and Cosmology -- 16.Violation of Fundamental Symmetries.
Sommario/riassunto	This book aims at giving an overview over theoretical and phenomenological aspects of particle astrophysics and particle cosmology. To be of interest for both students and researchers in neighboring fields of physics, it keeps a balance between well established foundations that will not significantly change in the future and a more in-depth treatment of selected subfields in which

significant new developments have been taking place recently. These include high energy particle astrophysics, such as cosmic high energy neutrinos, the interplay between detection techniques of dark matter in the laboratory and in high energy cosmic radiation, axion-like particles, and relics of the early Universe such as primordial magnetic fields and gravitational waves. It also contains exercises and thus will be suitable for both introductory and advanced courses in astroparticle physics.
