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Titolo	Essays in honour of Victoria Chick / [edited by] Philip Arestis, Meghnad Desai and Sheila Dow
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High-Energy Cosmic Rays -- Fermi Acceleration of Astroparticles -- Rotation Powered Pulsars as Sources of High-Energy Particles -- High-Energy Particles from ?-Ray Bursts -- Cosmic Magnetic Fields from the Perspective of Ultra-High-Energy Cosmic Rays Propagation -- A Possible Nearby Origin for the Highest-Energy Events Observed -- Propagation of Ultra-High-Energy Radiation -- Neutrino Cascades: The Byproducts of Propagation of Ultra-High-Energy Neutrinos -- Extreme-Energy Cosmic Rays: Hints to New Physics Beyond the Standard Model? -- Summary of the School: A Critical View on the Origin of the Ultra-High-Energy Cosmic Rays.

Sommario/riassunto

The origin of the most energetic particles observed in nature is one of the major unresolved questions in modern astrophysics. Theoretical speculations range from electromagnetic acceleration in some unknown astrophysical source to as yet undiscovered particle physics beyond the Standard Model. These speculations have also lead to the development of new detection concepts and experimental projects, some of which are currently under construction. The present volume consists of a self-contained set of lectures which cover most of these aspects: from the speculative origins and the acceleration and propagation mechanisms to a discussion of the detection techniques. It emphasizes the strong interdisciplinarity of this topic and highlights the many open questions. This volume is intended for students entering this field and for professional astronomers and particle and theoretical physicists.