

Table of Contents

Introduction to Cosmic Rays <i>Peter L. Biermann, Günter Sigl</i>	1
Phenomenology of Ultra-High-Energy Atmospheric Showers <i>Pierre Billoir</i>	27
The Air Fluorescence Method for Measuring Extremely-High-Energy Cosmic Rays <i>Shigeru Yoshida</i>	45
Fermi Acceleration of Astroparticles <i>Guy Pelletier</i>	58
Rotation Powered Pulsars as Sources of High-Energy Particles <i>Bronisław Rudak</i>	90
High-Energy Particles from γ-Ray Bursts <i>Eli Waxman</i>	122
Cosmic Magnetic Fields from the Perspective of Ultra-High-Energy Cosmic Rays Propagation <i>Gustavo Medina Tanco</i>	155
A Possible Nearby Origin for the Highest-Energy Events Observed <i>Peter L. Biermann, Eun-Joo Ahn, Philipp P. Kronberg, Gustavo Medina-Tanco, Todor Stanev</i>	181
Propagation of Ultra-High-Energy Radiation <i>Günter Sigl</i>	196
Neutrino Cascades: The Byproducts of Propagation of Ultra-High-Energy Neutrinos <i>Shigeru Yoshida</i>	255
Extreme-Energy Cosmic Rays: Hints to New Physics Beyond the Standard Model? <i>Pijushpani Bhattacharjee, Günter Sigl</i>	275

**Summary of the School: A Critical View on the Origin
of the Ultra-High-Energy Cosmic Rays**
Murat Boratav, Antoine Letessier-Selvon 300

Index 319