

Undergraduate Lecture Notes in Ph

Alessandro De Angelis Mário João Martins Pimenta

Introduction

to Particle and

Astroparticle

## Introduction to Particle and Astroparticle Physics Ouestions to the Universe

A. De Angelis, M.J.M. Pimenta

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- Introduces both particle and astroparticle physics in a balanced way, at the university level
- Discusses the most recent discoveries
- Provides information on the latest cosmic ray detectors and the observational implications of new concepts in cosmology
- Requires only a basic knowledge of quantum mechanics

This book, written by researchers who had been professionals in accelerator physics before becoming leaders of groups in astroparticle physics, introduces both fields in a balanced and elementary way, requiring only a basic knowledge of quantum mechanics on the part of the reader. The early history of particle physics cannot be distinguished from the history of cosmic rays. With the advent of accelerators, however, the importance of cosmic rays in particle physics was lost. This situation persisted until the 1990s, when novel techniques allowed breakthrough discoveries, and exploration of new physics scales now requires returning to cosmic rays. The new profile of scientists in fundamental physics ideally involves the merging of knowledge in astroparticle and particle physics, but the duration of modern experiments is such that people cannot simultaneously be practitioners in both. *Introduction to Particle and Astroparticle Physics* is designed to bridge the gap between the fields. It can be used as a self-training book, a consultation book, or a textbook providing a "modern" approach to particles and fundamental interactions.



Physics

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