Eigen

Detectors in High-Energy Physics Experiments

Underlying Physics, Working Principles, and Realizations

This open access textbook explores the physics of detectors used in high-energy physics and heavy ion physics experiments. In addition to presenting fundamental principles, physics laws, and working techniques, the author delves into various subdetectors, summarizing their properties. These include gaseous detectors, semiconductor vertex detectors, calorimeters, photodetectors, and complete experimental setups. The aim is to provide students with a comprehensive understanding of state-of-the-art technologies in the field. Intended for master's and early PhD students in physics, the book requires a basic knowledge of mechanics, quantum mechanics, electrodynamics, statistics, and particle physics. Each chapter is enriched with exercises designed to deepen the reader's understanding of the material.

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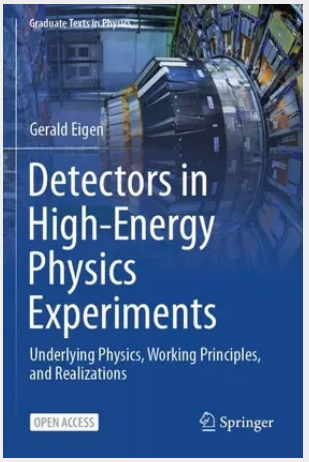

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