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Autore	Tavernier Stefaan
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Soggetti	Nuclear physics Heavy ions Particle acceleration Nuclear energy Biomedical engineering Physical measurements Measurement Nuclear Physics, Heavy Ions, Hadrons Particle Acceleration and Detection, Beam Physics Nuclear Energy Biomedical Engineering and Bioengineering Particle and Nuclear Physics Measurement Science and Instrumentation
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Interactions of Particles in Matter -- Natural and Man-Made Sources of Radiation -- Detectors Based on Ionisation in Gases -- Detectors Based on Ionisation in Semiconductor Materials -- Detectors Based on Scintillation -- Neutron Detection -- Electronics for Particle Detectors.

Sommario/riassunto

The book is based on a course in nuclear and particle physics that the author has taught over many years to physics students, students in nuclear engineering and students in biomedical engineering. It provides the basic understanding that any student or researcher using such instruments and techniques should have about the subject. After an introduction to the structure of matter at the subatomic scale, it covers the experimental aspects of nuclear and particle physics. Ideally complementing a theoretically-oriented textbook on nuclear physics and/or particle physics, it introduces the reader to the different techniques used in nuclear and particle physics to accelerate particles and to measurement techniques (detectors) in nuclear and particle physics. The main subjects treated are: interactions of subatomic particles in matter; particle accelerators; basics of different types of detectors; and nuclear electronics. The book will be of interest to undergraduates, graduates and researchers in both particle and nuclear physics. For the physicists it is a good introduction to all experimental aspects of nuclear and particle physics. Nuclear engineers will appreciate the nuclear measurement techniques, while biomedical engineers can learn about measuring ionising radiation, the use of accelerators for radiotherapy. What’s more, worked examples, end-of-chapter exercises, and appendices with key constants, properties and relationships supplement the textual material.