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Descrizione fisica	1 online resource (XIX, 612 p. 269 illus.)
Collana	Graduate Texts in Physics, , 1868-4513
Disciplina	530
Soggetti	Nuclear physics Heavy ions Elementary particles (Physics) Quantum field theory Nuclear Physics, Heavy Ions, Hadrons Elementary Particles, Quantum Field Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Passage of Charged Particles Through Matter -- Passage of Radiation Through Matter -- Radioactivity -- General Properties of Nuclei -- The Nuclear 1\vo-Body -- Nuclear Models -- Nuclear Reactions.
Sommario/riassunto	This textbook explains the experimental basics, effects and theory of nuclear physics. It supports learning and teaching with numerous worked examples, questions and problems with answers. Numerous tables and diagrams help to better understand the explanations. A better feeling to the subject of the book is given with sketches about the historical development of nuclear physics. The main topics of this book include the phenomena associated with passage of charged particles and radiation through matter which are related to nuclear resonance fluorescence and the Moessbauer effect., Gamov's theory of alpha decay, Fermi theory of beta decay, electron capture and gamma decay. The discussion of general properties of nuclei covers nuclear sizes and nuclear force, nuclear spin, magnetic dipole moment and electric quadrupole moment. Nuclear instability against various modes of decay and Yukawa theory are explained. Nuclear models such as Fermi Gas Model, Shell Model, Liquid Drop Model, Collective Model and

Optical Model are outlined to explain various experimental facts related to nuclear structure. Heavy ion reactions, including nuclear fusion, are explained. Nuclear fission and fusion power production is treated elaborately.

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