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Titolo	An Advanced Course in Modern Nuclear Physics // edited by J.M. Arias, M. Lozano
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Descrizione fisica	1 online resource (XII, 350 p.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 581
Disciplina	539.7
Soggetti	Nuclear physics Heavy ions Nuclear fusion Particle acceleration Nuclear Physics, Heavy Ions, Hadrons Nuclear Fusion Particle Acceleration and Detection, Beam Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Physics and Astronomy."
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	The theory of the nucleon-nucleon interaction -- The atomic nucleus observed with electromagnetic probes -- The nuclear shell model -- The nuclear collective motion -- The interacting boson model -- The limits of the mean field -- The microscopic treatment of the nuclear system -- Semi-classical methods in nuclear physics -- Scattering and reactions of halo nuclei -- Nuclear physics away from the valley of stability -- Structure of vacuum and elementary matter: from superheavies via hypermatter to antimatter.
Sommario/riassunto	The field of nuclear physics is entering the 21st century while experiencing a strong revival. On the one hand it is changing qualitatively through new experimental developments that allow us to direct radioactive and other exotic probes to target nuclei, and spark off extremely energetic nuclear collisions. Also, the impressive sophistication of new detector systems leads us to expect a number of new discoveries in the near future. On the other hand many new

applications have appeared in fields as diverse as medicine, industry, art, archaeology and the environmental sciences. This book is a set of extended lectures on basic and new topics, that gives a tutorial introduction to the field of modern nuclear physics. It is ideally suited to bridging the gap between the standard textbook material and the research literature, and provides the necessary foundation for acting as those who intend to work in any of the many disciplines where nuclear science and technology is going to play an important role in the future.
