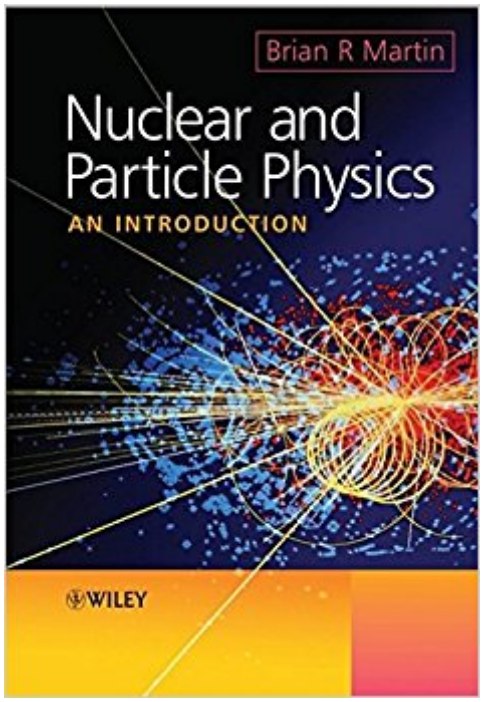
Nuclear And Particle Physics: An Introduction



Synopsis

Nuclear and Particle Physics is an accessible, balanced introduction to the subject and provides a readable and up-to-date overview of both the theoretical and experimental aspects of nuclear and particle physics. The emphasis is on the phenomenological approach to understanding experimental phenomena. The text opens with an introduction to the basic concepts used in nuclear and particle physics and then moves on to describe their respective phenomenologies and experimental methods. Later chapters explore the interpretation of data via models and theories, including the standard model of particle physics and the liquid drop model and shell model of nuclear physics. Several applications of nuclear physics are discussed, including nuclear medicine and the production of power from nuclear fission and fusion. The book closes with a chapter on outstanding problems, including extensions to the standard model, implications for particle astrophysics, improvements in medical imaging and the prospects for power production. Problems are included at the end of each chapter, with a full set of solutions provided. Accessible overview of nuclear and particle physics suitable for a first course in the subject. Chapters are supplemented by an extensive set of problems with full solutions. Includes Appendices on some topics in quantum mechanics and relativistic kinematics. An invaluable text for all physics and astronomy students.

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Customer Reviews

"This is a text that would be good for both lecturer and student." (The Higher Education Academy Physical Sciences Centre, December 2008) "Enthusiastically recommended as a useful addition to

any college or university library." (CHOICE, December 2006)

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I was looking for a text discussion of the Standard Model of Particle Physics to supplement my reading of Warped Passages. This textbook is the same vintage and is well organized for my purpose including a discussion of accelerators which supplements nicely. It was also a good price (good value) for this kind of textbook.

This kind of text is very good for beginning students and as reference.There are nice diagrams of new machines, mentions of breaks in the standard modeland neutrino mass. The Klein-Gordon equation is given in it’s nativedimensional units of 1/ length^2 which is better than in many texts that I have that use more artificial units in Messiah, Weinberg and Gordon Kane.The text lacks a necessary approach to quantum groups or I would have given it 5 stars.

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