

1. Record Nr.	UNINA9910624389203321
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Titolo	Elementary Particles and Their Interactions / / by Stephen P. Martin, James D. Wells
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	3-031-14368-X
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (362 pages)
Collana	Graduate Texts in Physics, , 1868-4521
Disciplina	016.61483 539.72
Soggetti	Particles (Nuclear physics) Quantum field theory Quantum theory Elementary Particles, Quantum Field Theory Quantum Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction -- Special Relativity and Lorentz Transformations -- Relativistic Quantum Mechanics of Single Particles -- Field Theory and Lagrangians -- Quantum Electro-Dynamics (QED) -- Decay Processes -- Fermi Theory of Weak Interactions -- Gauge theories -- Quantum Chromo-Dynamics (QCD) -- Spontaneous Symmetry Breaking -- The Standard Electroweak Model.
Sommario/riassunto	The Standard Model of elementary particle physics was tentatively outlined in the early 1970s. The concepts of quarks, leptons, neutrinos, gauge symmetries, chiral interactions, Higgs boson, strong force, weak force, and electromagnetism were all put together to form a unifying theory of elementary particles. Furthermore, the model was developed within the context of relativistic quantum field theory, making it compatible with all of the laws of Einstein's Special Relativity. The successes of the Standard Model over the years have been tremendous and enduring, leading up to the recent discovery and continuing study of the Higgs boson. This book is a comprehensive and technical introduction to Standard Model physics. Martin and Wells provide

readers who have no prior knowledge of quantum field theory or particle physics a firm foundation into the fundamentals of both. The emphasis is on obtaining practical knowledge of how to calculate cross-sections and decay rates. There is no better way to understand the necessary abstract knowledge and solidify its meaning than to learn how to apply it to the computation of observables that can be measured in a laboratory. Beginning graduate students, both experimental and theoretical, and advanced undergraduate students interested in particle physics, will find this to be an ideal one-semester textbook to begin their technical learning of elementary particle physics.
