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and their properties; Appendix B Feynman rules for QED and QCD and Feynman integrals; Appendix C Feynman rules for the Standard Model; Appendix D One-loop Feynman integrals; Appendix E Elements of group theory; References; Index

Sommario/riassunto

Quantum field theory forms the present theoretical framework for our understanding of the fundamental interactions of particle physics. This up-dated and expanded text examines gauge theories and their symmetries with an emphasis on their physical and technical aspects. Beginning with a new chapter giving a systematic introduction to classical field theories and a short discussion of their canonical quantization and the discrete symmetries C, P and T, the book provides a brief exposition of perturbation theory, the renormalization programme, and the use of the renormalization group equation. It then explores topics of current research interest including chiral symmetry and its breaking, anomalies, and low energy effective lagrangians and some basics of supersymmetry. A chapter on basics of the electroweak theory is now included. Professor Pokorski, a distinguished theoretical physicist, has presented here a self-contained text for graduate courses in physics; the only prerequisite is some grounding in quantum field theory.
