

An invitation to quantum field theory

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20425305&lokasi=lokal>

Abstrak

This book provides an introduction to Quantum Field Theory (QFT) at an elementary level with only special relativity, electromagnetism and quantum mechanics as prerequisites. Special attention is given to the realization of symmetries in particle physics: global and local symmetries, explicit, spontaneously broken, and anomalous continuous symmetries, as well as discrete symmetries. Beyond providing an overview of the standard model of the strong, weak and electromagnetic interactions and the current understanding of the origin of mass, the text enumerates the general features of renormalization theory as well as providing a cursory description of effective field theories and the problem of naturalness in physics. Among the more advanced topics the reader will find are an outline of the first principles derivation of the CPT theorem and the spin-statistics connection.

As indicated by the title, the main aim of this text is to motivate the reader to study QFT by providing a self-contained and approachable introduction to the most exciting and challenging aspects of this successful theoretical framework.