



# **Lectures on Quantum Field Theory, 2nd Edition**



By **Ashok Das** (University of Rochester, USA)

ISDIN
Extent
Binding
Year
Price

9781944660314 940pp Paperback 2022 Rs. 2095

## **ABOUT THE BOOK**

This book comprises the lectures of a two-semester course on quantum field theory, presented in a quite informal and personal manner. The course starts with relativistic one-particle systems, and develops the basics of quantum field theory with an analysis on the representations of the Poincaré group. Canonical quantization is carried out for scalar, fermion, Abelian and non-Abelian gauge theories. Covariant quantization of gauge theories is also carried out with a detailed description of the BRST symmetry. The Higgs phenomenon and the standard model of electroweak interactions are also developed systematically. Regularization and (BPHZ) renormalization of field theories as well as gauge theories are discussed in detail, leading to a derivation of the renormalization group equation. In addition, two chapters — one on the Dirac quantization of constrained systems and another on discrete symmetries — are included for completeness, although these are not covered in the two-semester course.

This second edition includes two new chapters, one on Nielsen identities and the other on basics of global supersymmetry. It also includes two appendices, one on fermions in arbitrary dimensions and the other on gauge invariant potentials and the Fock-Schwinger gauge.

### READERSHIP

Graduate students and researchers in theoretical physics.

### CONTENTS

- Preface
- Relativistic Equations
- Solutions of the Dirac Equation
- Properties of the Dirac Equation
- Representations of Lorentz and Poincaré Groups

### Feel Books Pvt. Ltd.

4381/4 Ansari Road Daryaganj, New Delhi 110002, Tel: +91 11 47472600, Email: marketing@feelbooks.in

#### www.feelbooks.in

- Free Klein–Gordon Field Theory
- Self-Interacting Scalar Field Theory
- Complex Scalar Field Theory
- Dirac Field Theory
- Maxwell Field Theory
- Dirac Method for Constrained Systems
- Discrete Symmetries
- Yang–Mills Theory
- BRST Invariance and Its Consequences
- Higgs Phenomenon and the Standard Model
- Regularization of Feynman Diagrams
- Renormalization Theory
- Renormalization Group and Equation
- Nielsen Identities and Gauge Independence of Physical Parameters
- Basics of Global Supersymmetry
- Index

het

For orders or enquiries, please contact us:

# Feel Books Pvt. Ltd.

	www.feelbooks.in
Kolkata	Mobile: +91 9836160013, Email: dbhattacharjee@feelbooks.in
Chennai	Mobile: +91 9003047502, Email: gsrinivasan@feelbooks.in
Mumbai	Mobile: +91 9833435804, Email: adube@feelbooks.in
Bengaluru	Tel: +91 80 26762129, Email: bangalore@feelbooks.in
Delhi	Tel: +91 11 47472600, +91 9015043442, Email: orders@feelbooks.in