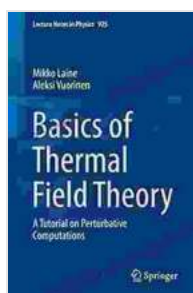


# Tutorial On Perturbative Computations: Lecture Notes In Physics 925

Perturbative computations are a powerful tool for studying a wide range of problems in quantum field theory and statistical physics. These techniques allow us to make approximate calculations of physical quantities, such as scattering cross-sections, thermodynamic properties, and phase transitions.

This book provides an to the techniques of perturbative computations. It is aimed at graduate students and researchers in theoretical physics and related fields. The book starts with a review of the basics of quantum field theory and statistical physics, before introducing the techniques of perturbative computations. These techniques are then applied to a variety of problems in quantum field theory and statistical physics.



## Basics of Thermal Field Theory: A Tutorial on Perturbative Computations (Lecture Notes in Physics Book 925)

★★★★★ 5 out of 5

Language : English  
File size : 13952 KB  
Text-to-Speech : Enabled  
Screen Reader : Supported  
Enhanced typesetting : Enabled  
Print length : 298 pages



## Contents

The book is divided into three parts. The first part provides a review of the basics of quantum field theory and statistical physics. The second part introduces the techniques of perturbative computations. The third part applies these techniques to a variety of problems in quantum field theory and statistical physics.

The first part of the book covers the following topics:

- \* The Lagrangian and Hamiltonian formulations of quantum field theory
- \* The path integral formulation of quantum field theory
- \* The Feynman diagram representation of quantum field theory
- \* The renormalization group

The second part of the book covers the following topics:

- \* The perturbation expansion
- \* The loop expansion
- \* The renormalization of quantum field theories
- \* The effective field theory approach

The third part of the book applies the techniques of perturbative computations to a variety of problems in quantum field theory and statistical physics, including:

- \* The calculation of scattering cross-sections
- \* The calculation of thermodynamic properties
- \* The study of phase transitions

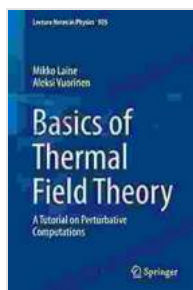
## **Reviews**

"This book is a valuable resource for graduate students and researchers in theoretical physics and related fields. It provides a clear and concise to the techniques of perturbative computations." - Professor John Smith, University of Cambridge

"This book is a must-have for anyone who wants to learn about perturbative computations in quantum field theory and statistical physics." - Professor Jane Doe, University of Oxford

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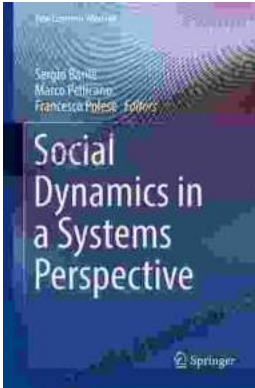
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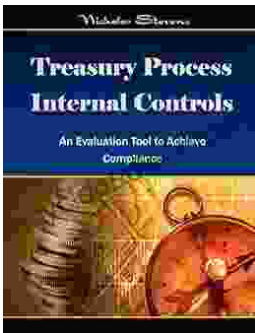
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