

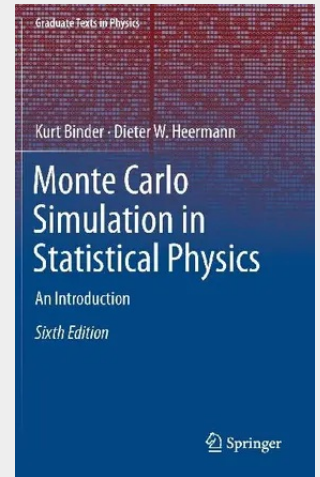
Monte Carlo Simulation in Statistical Physics

An Introduction

The sixth edition of this highly successful textbook provides a detailed introduction to Monte Carlo simulation in statistical physics, which deals with the computer simulation of many-body systems in condensed matter physics and related fields of physics and beyond (traffic flows, stock market fluctuations, etc.). Using random numbers generated by a computer, these powerful simulation methods calculate probability distributions, making it possible to estimate the thermodynamic properties of various systems. The book describes the theoretical background of these methods, enabling newcomers to perform such simulations and to analyse their results. It features a modular structure, with two chapters providing a basic pedagogic introduction plus exercises suitable for university courses; the remaining chapters cover major recent developments in the field.

This edition has been updated with two new chapters dealing with recently developed powerful special algorithms and with finitesize scaling tools for the study of interfacial phenomena, which are important for nanoscience. Previous editions have been highly praised and widely used by both students and advanced researchers.

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