

A Guide to Monte Carlo Simulations in Statistical Physics

Dealing with all aspects of Monte Carlo simulation of complex physical systems encountered in condensed-matter physics and statistical mechanics, this book provides an introduction to computer simulations in physics.

This fourth edition contains extensive new material describing numerous powerful algorithms not covered in previous editions, in some cases representing new developments that have only recently appeared. Older methodologies whose impact was previously unclear or unappreciated are also introduced, in addition to many small revisions that bring the text and cited literature up to date. This edition also introduces the use of petascale computing facilities in the Monte Carlo arena.

Throughout the book there are many applications, examples, recipes, case studies, and exercises to help the reader understand the material. It is ideal for graduate students and researchers, both in academia and industry, who want to learn techniques that have become a third tool of physical science, complementing experiment and analytical theory.

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Fourth Edition

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