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Statistical Physics: An Introduction

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An Introduction

Springer

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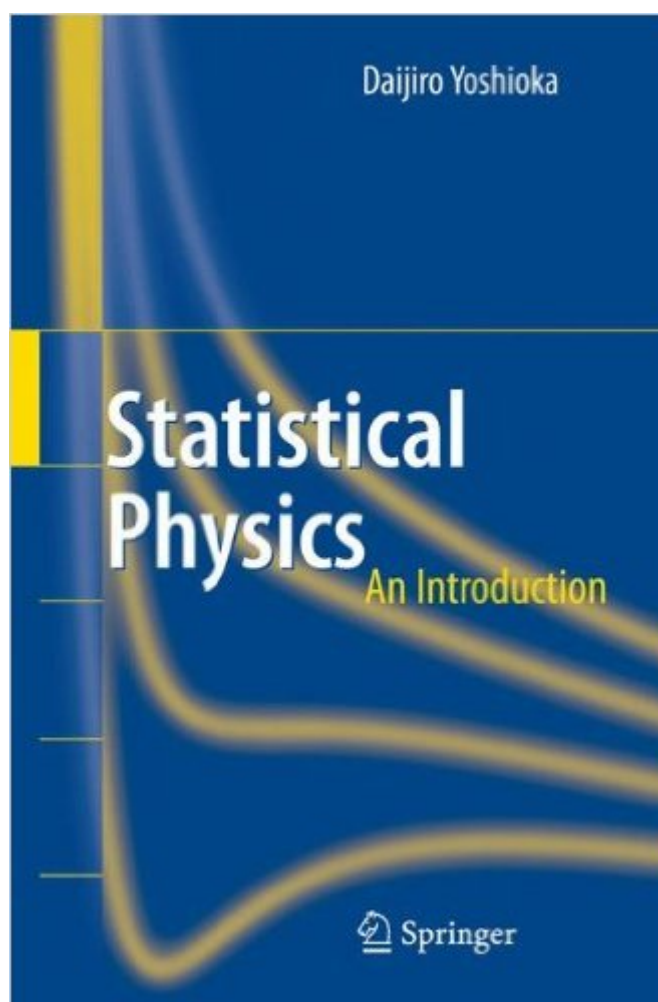
Synopsis

This book provides a comprehensive presentation of the basics of statistical physics. The first part explains the essence of statistical physics and how it provides a bridge between microscopic and macroscopic phenomena, allowing one to derive quantities such as entropy. Here the author avoids going into details such as Liouvilleâ ™s theorem or the ergodic theorem, which are difficult for beginners and unnecessary for the actual application of the statistical mechanics. In the second part, statistical mechanics is applied to various systems which, although they look different, share the same mathematical structure. In this way readers can deepen their understanding of statistical physics. The book also features applications to quantum dynamics, thermodynamics, the Ising model and the statistical dynamics of free spins.

Book Information

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Customer Reviews

This book is not good. The chapters are extremely short, and as a result the entire book is weak. There are very few connections between equations. At times, it seems as if Yoshioka pulls the equations (and material) out of thin air. Some of the equations he puts in are also of rare form and, in my experience, nearly useless in learning Statistical Mechanics. I am forced to use this book for a graduate level Statistical Mechanics course, and I find myself running back to my undergraduate text, Daniel Schroeder's 'Thermal Physics' for reference to EVERYTHING that Yoshioka has missed (which is just about everything important for developing a good sense of stat mech). I would heavily NOT recommend this book for anyone, student, teacher, or self learner. There are far better books to use than this one.

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