Computational Physics

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Compuitional physics involves the use of computer calculations and simulations to

solve physical problems. This book describes computational methods used in theoretical physics with emphasis on condensed matter applications. Coverage begins with an overview of the wide variety of topics and algorithmic approaches studied in this book. The next chapters concentrate on electronic structure calculations, presenting the Hartree-Fock and Density Functional formalisms, and band structure methods. Later chapters discuss molecular dynamics simulations and Monte Carlo methods in classical and quantum physics, with applications to condensed matter and particle field theories. Each chapter details the necessary fundamentals, describes the formation of a sample program, and includes problems that address related analytical and numerical issues. Useful appendices on numerical methods and random number generators are also included. This volume bridges the gap between undergraduate physics and computational research. It is an ideal textbook for graduate students as well as a valuable reference for researchers.

作者介绍:

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标签

计算物理

物理

凝聚态物理

Computation

凝聚态7

physics

computational

CondensedMatter

评论

读过几页。6.8 extracting information from band structures我觉得这个小节还是写的十分清晰的。

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书评

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