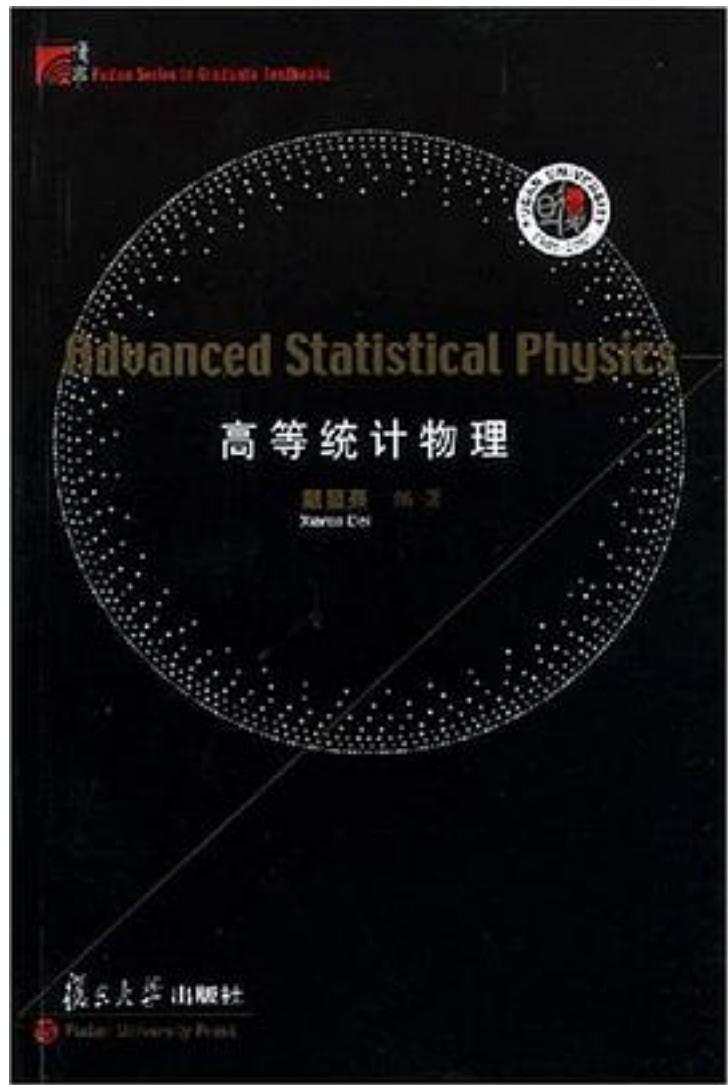


# 高等统计物理



[高等统计物理 下载链接1](#)

著者:戴显熹

出版者:上海复旦大学

出版时间:2007-11

装帧:

isbn:9787309054880

Statistical physics establishes a bridge from the macroscopic world to study the microscopic world. This is a theory with the fewest assumptions and the broadest conclusions. Up to now there is no evidence to show that statistical physics itself is responsible for any mistakes. Statistical physics has become an important branch of modern theoretical physics and this course has become one of the common fundamental courses of graduate students in different majors in physics departments. Statistical physics is a branch of science engaged in studying the laws of thermal motion of macroscopic systems. The advanced statistics for graduate students mainly studies quantum statistics. The first four chapters of this book are fundamental, and should be well known. The last five chapters are recent developments, including the studies on Bose-Einstein condensation, a class of inverse problems in quantum statistics (their Chen's exact solution formulas, Dai's exact solution formulas, asymptotic behavior control theory, and concrete realizations of the inversion theories), an introduction to the theory of Green's functions in quantum statistics, the unified diagonalization theorem for Hamiltonians of quadratic form, and an introduction to the third formulation of quantum statistics and the functional integral approach. This course was edited by revising the lecture notes of the author, from courses of quantum statistics and advanced statistics for graduate students, since 1978. At the same time, this work contains the research results of some related projects, supported by the National Natural Science Foundation of China.

## 作者介绍:

戴显熹：1938年5月生于温州。1961年7月毕业于复旦大学物理系。1985年起任复旦大学物理系教授，1986年起任博士生导师。长期从事量产统计和理论物理方法研究，发表学术论文100多篇。

自1978年以来，从事研究生的量子统计与高等统计课程教学，以及本科生的电动力学、量子力学、数理方法、超导物理、理论物理方法等课程的教学。曾获得杨振宁教授授予的Glorious Sun奖金，曾以物理学中奇性问题研究获教育部授予的科学进步奖(二等)等。1980年来应邀访问过美国的休斯顿大学、纽约州立大学理论物理(杨振宁)研究所、德克萨斯超导中心、杨伯翰大学等，曾任杨伯翰大学客座教授。在量子统计、物理学中奇性问题、一些逆问题的严格解及其统一理论和渐近行为控制理论等方面作过较为系统的研究，首次由一材料的比热实际数据中反演出声子谱。

目录: Chapter 1 Fundamental Principles 1.1 Introduction: The Characters of Thermodynamics and Statistical Physics and Their Relationship 1.2 Basic Thermodynamic Identities 1.3 Fundamental Principles and Conclusions of Classical Statistics 1.3.1 Microscopic and Macroscopic Descriptions, Statistical Distribution Functions 1.3.2 Liouville Theorem 1.3.3 Statistical Independence 1.3.4 Microscopical Canonical, Canonical and Grand Canonical Ensembles 1.4 Boltzmann Gas 1.5 Density Matrix 1.5.1 Density Matrix 1.5.2 Some General Properties of the Density Matrix 1.6 Liouville Theorem in Quantum Statistics 1.7 Canonical Ensemble 1.8 Grand Canonical Ensemble 1.8.1 Fundamental Expression of the Grand Canonical Ensemble 1.8.2 Derivation of the Fundamental Thermodynamic Identity 1.9 Probability Distribution and Slater Sum 1.9.1 Meaning of the Diagonal Elements of the Density Matrix 1.9.2 Slater Summation 1.9.3 Example : Probability of the Harmonic Ensemble 1.10 Theory of the Reduced Density Matrix Chapter 2 The Perfect Gas in Quantum Statistics 2.1 Indistinguishability Principle for Identical Particles 2.2 Bose Distribution and Fermi Distribution 2.2.1 Perfect Gases in Quantum Statistics 2.2.2 Bose Distribution 2.2.3 Fermi Distribution 2.2.4 Comparison of Three Distributions; Gibbs Paradox Again

.....Chapter 3 Second Quantization and Model HamiltoniansChapter 4 Least Action Principle, Field Quantization and the Electron-Phonon SystemChapter 5 Bose-Einstein CondensationChapter 6 Some Inverse Problems in Quantum StatisticsChapter 7 An Introduction to Theory of Green's FunctionsChapter 8 A Unified Diagonalization Theorem for Quadratic HamiltonianChapter 9 Functional Integral Approach: A Third Formulation of Quantum Statistical MechanicsReferencesIndex  
• • • • • (收起)

[高等统计物理 下载链接1](#)

标签

统计力学5

物理

评论

[高等统计物理 下载链接1](#)

书评

[高等统计物理 下载链接1](#)