

<<固态磁性导论>>

图书基本信息

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作者：莫翰

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内容概要

The present greatly enlarged version was mainly written during a sabbatical at the university of Uppsala during 2000. The aim of the book is to present a largely phenomenological introduction to the field of solid state magnetism at a relatively elementary level. The two basic concepts of magnetism in solids namely the localized and the delocalized description are presented as the extreme approaches. The true nature of magnetism lies , as often in life , somewhere in between , sometimes showing a tendency towards the more localized side , sometimes tending to the delocalized side. It is perhaps this mixing of concepts which makes magnetism appear complicated and difficult. Another source of confusion is the different language used by theoreticians and experimentalists. I have tried very hard to clarify these rather more semantic problems and to use a uniform nomenclature throughout the book. It is my belief and my experience that the approach presented here provides a useful introduction not only for the physicist , but also for the interested reader coming from fields like chemistry , electrical engineering or even geo-sciences. The mathematical concepts used are kept rather simple and hardly ever go beyond an undergraduate course in mathematics for physicists , chemists or engineering. Since the book emerged from a lecture course I have given at Vienna University of Technology for the last 15 years , the chapters in the book are not completely self-contained. The first-time reader is thus advised to read the chapters in the sequence that they appear in the book. It is my sincere hope that after having read this book the reader will agree that for once the Encyclopedia Britannica is in error when it states Few subjects in , science are more difficult to understand , than magnetism , (Encyclopedia Britannica , 15th edition 1989) .

The present book does not attempt to cover the whole field of solid state magnetism , but tries to provide an overview by selecting special topics. The idea is to create an interest in this fascinating field in which quantum mechanics , thermodynamics and computer simulations join forces to explain "Magnetism in the Solid State".

<<固态磁性导论>>

书籍目录

1. A Historical Introduction
2. Consequences of Fermi Statistics
 - 2.1 Quantum Statistics of Fermions
 - 2.2 Free Energy of the Fermi Gas
3. Paramagnetism
4. Energy Bands in the Crystal
5. Experimental Basis of Ferromagnetism
 - 5.1 Nickel Alloys
 - 5.2 Iron Alloys
 - 5.3 Palladium Alloys
 - 5.4 Iron-Nickel Alloys
 - 5.5 Effects of Strong Magnetic Fields
 - 5.6 Effects of High Pressure
 - 5.7 Effects of Finite Temperature
 - 5.8 Susceptibility above T_c
 - 5.8.1 Susceptibility of “ Classical Spins ”
 - 5.9 Critical. Exponents
 - 5.10 Neutron Diffraction
 - 5.11 Further Experimental Methods
6. Weiss Molecular Field Model
 - 6.1 Rhodes-Wohlfarth Plot
7. Heisenberg Model
 - 7.1 Magnon Operators
 - 7.2 Heisenberg Hamiltonian in Magnon Variables
 - 7.3 Magnon Dispersion Relation
 - 7.3.1 Specific Heat of Magnons
 - 7.3.2 Ordering Temperature
 - 7.4 Approximations for the Heisenberg Model
 - 7.4.1 Ising Model
 - 7.4.2 XY Model
 - 7.4.3 Mean Field Solutions of the Heisenberg Model
8. Itinerant Electrons at 0 K
 - 8.1 Pauli Susceptibility of the Itinerant Electrons
 - 8.2 Susceptibility of the Interacting Itinerant Electrons
 - 8.3 Non linear Effects
 - 8.4 Effects of High Fields at 0 K
 - 8.4.1 Non-magnetic Limit
 - 8.4.2 Strong Ferromagnets
 - 8.4.3 Weak Ferromagnets
 - 8.4.4 bcc Iron and hcp Cobalt
 - 8.4.5 Extremely High Fields
 - 8.4.6 Metamagnetism
 - 8.5 Susceptibility of Paramagnetic Alloys
9. Band Gap Theory of Strong Ferromagnetism
 - 9.1 Magnetism of Alloys

<<固态磁性导论>>

10. Magnetism and the Crystal Structure——Covalent Magnetism

10.1 Crystal Structure of Mn , Fe , Co , and Ni

10.2 Covalent Magnetism

10.3 Covalent Polarization

11. Magnetic Impurities in an Electron Gas

11.1 Impurity Potential in the Jellium

11.2 Strong Perturbations in the Jellium

11.3 Layer and Line Defects

11.4 Magnetic Impurities and Oscillations of the Magnetization

12. Itinerant Electrons at T = 0 : A Historical Survey

12.1 Excitations at Low Temperatures

12.1.1 Strongly Ferromagnetic Systems

12.1.2 Weakly Ferromagnetic Systems

12.2 Stoner Theory for a Rectangular Band

12.3 Weak Excitations with $\zeta \ll 1$

13. Hubbard Model

13.1 Beyond Hartree-Fock

14. Landau Theory for the Stoner Model

14.1 General Considerations

14.2 Application to the Stoner Model

15. Coupling Between Itinerant and Localized Moments

16. Origin of the Molecular Field

16.1 Heitler-London Theory for the Exchange Field

16.1.1 Magnetism of a Spin Cluster

16.1.2 Spinwaves for Localized Electrons

17. Exchange and Correlation in Metals

17.1 Free Electron Gas

17.2 Tightly Bound Electrons

18. Spin Fluctuations

18.1 Fluctuations of a Thermodynamical Variable

18.2 Fluctuations of the Magnetic Moment

18.3 Specific Heat of the Spin Fluctuations

18.4 Magneto-Volume Coupling

18.5 Applications of the Spin Fluctuation Model

18.6 Comparing the Spin-Fluctuation and the Stoner-Model

19. Single Particle Excitations Versus Spin Waves

20. Landau-Ginzburg Model for Spin Fluctuations

21. Conclusion and Lookout

A. Appendices

A. Convexity Property of the Free Energy

B. Derivation of the Coefficient a in (3.17)

C. Quenching of the Orbital Momentum

D. Properties of “ Classical ” Spins

E. Derivation of the Constant c in (8.24)

F. Ornstein-Zernicke Extension

G. Bogoliubov-Peierls-Feynman Inequality

<<固态磁性导论>>

H. The Factor 2 in Equation (7.27)

I. Hund ' s Rules

J. Polynomial Coefficients in (18.12)

K. Conversion Between Magnetic Units

References

Index

<<固态磁性导论>>

媒体关注与评论

Since this book has been so well received by the scientific community that the first printing has been sold within three years , I was asked 'oy the publishers to produce an updated version for a second printing. I am grateful to all colleagues (mainly students) who reported typos , ambiguous or unclear formulations etc. I considered all of them seriously and thus made a number of changes , which I hope will improve the text. —

—Peter Mohn

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