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""4.1 EXCHANGE INTERACTIONS AND THE HEISENBERG MODEL FOR LOCALIZED SPINS"""""4.2 MAGNETIC SUSCEPTIBILITY OF PARAMAGNETICTRANSITION METALS""; ""4.3 ITINERANT ELECTRON FERROMAGNETISM AND THE STONER THEORY""; ""4.4 SPIN-FLUCTUATION THEORIES""; ""4.5 ELECTRONIC STRUCTURE AND PROPERTIES OF HALF-METALLIC FERROMAGNETS""; ""4.6 MAGNETISM OF HIGHLY-CORRELATED d-SYSTEMS""; ""4.7 MAGNETISM OF RARE EARTHS AND ACTINIDES""; ""4.8 MAGNETIC ANISOTROPY""; ""4.8.1 Quenching of orbital momenta by periodic lattice potential and magnetic anisotropy of d-metals""; ""4.8.2 Magnetic anisotropy of rare earths""
""5. TRANSPORT PROPERTIES"""""5.1 GENERAL CLASSIFICATION OF TRANSPORT PHENOMENA""; ""5.2 CALCULATION OF TRANSPORT COEFFICIENTS""; ""5.3 RESISTIVITY""; ""5.3.1 Electrona€?electron scattering""; ""5.3.2 Mott sa€?d scattering mechanism""; ""5.3.3 Resistivity of magnetic metals""; ""5.3.4 Resistivity of transition metal alloys""; ""5.3.5 Two-current model of ferromagnetic metals""; ""5.4 THERMOELECTRIC POWER""; ""5.5 THE HALL EFFECT""; ""5.6 MAGNETORESISTIVITY""; ""5.7 ANOMALOUS TRANSPORT EFFECTS IN FERROMAGNETIC METALS""; ""5.7.1 The extraordinary Hall effect""
""5.7.2 Magnetoresistivity in the presence of spontaneous magnetization"""""5.7.3 Magnetooptical effects""; ""6. THE KONDO EFFECT AND PROPERTIES OF ANOMALOUS d- AND f-COMPOUNDS"";
""6.1 THE ONE-CENTRE KONDO EFFECT""; ""6.2 THE KONDO TEMPERATURE FOR d-IMPURITIES""; ""6.3 SPIN DYNAMICS AND ELECTRONIC PROPERTIES OF KONDO LATTICES""; ""6.4 GROUND STATE OF THE KONDO LATTICES""; ""6.5 INTERMEDIATE VALENCE SYSTEMS"";
""6.6 MAGNETIC ORDERING IN KONDO LATTICES AND HEAVY-FERMION COMPOUNDS""; ""6.7 CURRENT CARRIERS IN A TWO-DIMENSIONAL ANTIFERROMAGNET""
""6.8 SPIN-LIQUID STATE IN SYSTEMS WITH SPIN AND CHARGE DEGREES OF FREEDOM""

Sommario/riassunto

The book includes all main physical properties of d- and f-transition-metal systems and corresponding theoretical concepts. Special attention is paid to the theory of magnetism and transport phenomena. Some examples of non-traditional questions which are treated in detail in the book: the influence of density of states singularities on electron properties; many-electron description of strong itinerant magnetism; mechanisms of magnetic anisotropy; microscopic theory of anomalous transport phenomena in ferromagnets. Besides considering classical problems of solid state physics as applied to transition metals, modern developments in the theory of correlation effects in d- and f-compounds are considered within many-electron models. The book contains, where possible, a simple physical discussion. More difficult questions are considered in Appendices.