The Two-Dimensional Ising Model (Paperback)

By Barry M. McCoy, Tai Tsun Wu

Dover Publications Inc., United States, 2014. Paperback. Condition: New. Language: English . Brand New Book. Of all the systems in statistical mechanics on which exact calculations have been performed, declare the authors of this text, the two-dimensional Ising model is not only the most thoroughly investigated; it is also the richest and most profound. Originally published in 1973, this is the definitive survey of the Ising model, a mathematical model of ferromagnetism in statistical mechanics. This updated edition of the classic text features an extensive section on new developments. Geared toward advanced undergraduates and graduate students of physics, it is also suitable for physicists working in statistical mechanics and related fields. Following a brief introductory chapter, the book explores statistical mechanics, the one-dimensional Ising model, dimer statistics, specific heat of Onsager s lattice in the absence of a magnetic field, boundary specific heat and magnetization, and boundary spin-spin correlation functions. Subsequent chapters cover the correlation functions, Wiener-Hopf sum equations, spontaneous magnetization, behavior of the correlation functions, asymptotic expansion, and boundary hysteresis and spin probability functions. Two other chapters examine Ising models with random impurities in terms of specific heat and boundary effects. The book concludes with a new chapter examining...

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