<<逾渗>>

图书基本信息

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内容概要

This book is about the mathematics of percolation theory, with the emphasis upon presenting the shortest rigorous proofs of the main facts.I have made certain sacrifices in order to maximize the accessibility of the theory, and the major one has been to restrict myself almost entirely to the special case of bond percolation on the cubic lattice Zd.Thus there is only little discussion of such processes as continuum, mixed, inhomogeneous, long-range, first-passage, and oriented percolation.Nor have I spent much time or space on the relationship of percolation to statistical physics, infinite particle systems, disordered media, reliability theory, and so on.With the exception of the two final chapters, I have tried to stay reasonably close to core material of the sort which most graduate students in the area might aspire to know.No critical reader will agree entirely with my selection, and physicists may sometimes feel that my intuition is crooked.

作者简介

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书籍目录

章节摘录

版权页： 插图： Sections 3.2 and 3.3.The first systematic approach to strict inequalities forordered pairs of lattices is due to Menshikov(1987a,d,e),although there existedalready some special results in the literature.The discussion and technology ofSections 3.2 and 3.3 draws heavily on Aizenman and Grimmett(1991); see alsoGrimmett(1997). Theorem(3.16)may be adapted to enhancements of site percolation(see thediscussion following the statement of the theorem).The assumption that enhancements take place at all vertices x may be relaxed; see Aizenman and Grimmett(1991). The problem of entanglements appeared first in Kantor and Hassoid(1988),who reported certain numerical conclusions.The existence of an entanglementtransition different from that of percolation was proved by Aizenman and Grimmett(1991); the strict positivity of the entanglement critical point was provedby Holroyd(1998b).The entanglement transition has been studied more systematically by Grimmett and Holroyd(1998); in particular,they have discussedcertain topological difficulties in deciding on the 'correct' definition of an infiniteentanglement and of the entanglement critical point. Related issues arise in the study of so called 'rigidity percolation',in which onestudies the existence of infinite rigid components of the open subgraph of a lattice;see Jacobs and Thorpe(1995,1996)and Holroyd(1998a).Further accounts ofentanglement and rigidity may be found in Sections 12.5 and 12.6. The 'augmented percolation' question posed after Theorem(3.16)was discussed by Chayes,Chayes,and Newman(1984)in the context of invasion perco-lation on the triangular lattice and on the covering lattice of the square lattice.Seealso Pokorny,Newman,and Meiron(1990).The question in its present form wasanswered by Aizenman and Grimmett(1991).Section 3.4.Theorem(3.28)is taken from Grimmett and Stacey(1998),wherea general theorem of this sort is presented.Earlier work on strict inequalitiesbetween bond and site critical probabilities in two dimensions may be found.

编辑推荐

《逾渗(第2版)(英文)》适合数学专业、概率论和物理数方向的老师和相关的科研人员。