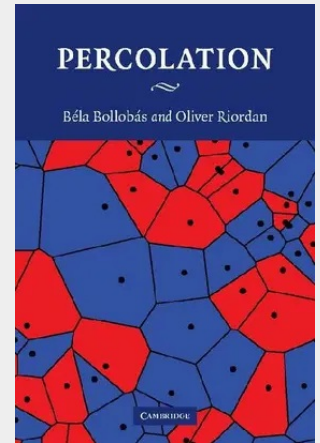


Percolation

Percolation theory was initiated some fifty years ago as a mathematical framework for the study of random physical processes such as flow through a disordered porous medium. It has proved to be a remarkably rich theory, with applications beyond natural phenomena to topics such as network modelling. The aims of this book are twofold. First to present classical results in a way that is accessible to non-specialists. Second, to describe, for the first time in a book, recent results of Smirnov in conformal invariance, and outline the proof that the critical probability for random Voronoi percolation in the plane is $1/2$. Throughout, the presentation is streamlined, with elegant and straightforward proofs requiring minimal background in probability and graph theory. Numerous examples illustrate the important concepts and enrich the arguments. All-in-all, it will be an essential purchase for mathematicians, physicists, electrical engineers and computer scientists working in this exciting area.

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