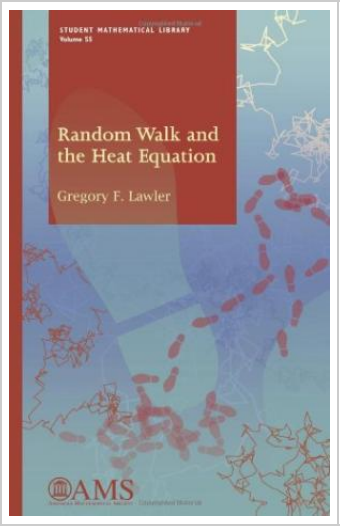

Random Walk and the Heat Equation (Paperback)

By Gregory F. Lawler

American Mathematical Society, United States, 2010. Paperback. Condition: New. Language: English . Brand New Book. The heat equation can be derived by averaging over a very large number of particles. Traditionally, the resulting PDE is studied as a deterministic equation, an approach that has brought many significant results and a deep understanding of the equation and its solutions. By studying the heat equation by considering the individual random particles, however, one gains further intuition into the problem. While this is now standard for many researchers, this approach is generally not presented at the undergraduate level. In this book, Lawler introduces the heat equation and the closely related notion of harmonic functions from a probabilistic perspective. The theme of the first two chapters of the book is the relationship between random walks and the heat equation. The first chapter discusses the discrete case, random walk and the heat equation on the integer lattice; and the second chapter discusses the continuous case, Brownian motion and the usual heat equation. Relationships are shown between the two. For example, solving the heat equation in the discrete setting becomes a problem of diagonalization of symmetric matrices, which becomes a problem in Fourier series in the...

Reviews

This book is indeed gripping and fascinating. It normally is not going to price a lot of. I am very easily will get a delight of reading a created pdf.
-- ***Albertha Cartwright***

The publication is not difficult in study preferable to fully grasp. It really is rally intriguing throgh looking at period of time. I found out this pdf from my dad and i advised this ebook to find out.
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