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NEW BOOK ANNOUNCEMENT

SERFOZO, R. (2009). ***Basics of Applied Stochastic Processes***

is the latest volume in the series

Probability and Its Applications

published by Springer in collaboration with the Applied Probability Trust.

Stochastic processes are mathematical models of random phenomena that evolve according to prescribed dynamics. Processes commonly used in applications are Markov chains in discrete and continuous time, renewal and regenerative processes, Poisson processes, and Brownian motion. This volume gives an in-depth description of the structure and basic properties of these stochastic processes. A main focus is on equilibrium distributions, strong laws of large numbers, and ordinary and functional central limit theorems for cost and performance parameters. Although these results differ for various processes, they have a common trait of being limit theorems for processes with regenerative increments. Extensive examples and exercises show how to formulate stochastic models of systems as functions of a system's data and dynamics, and how to represent and analyze cost and performance measures. Topics include stochastic networks, spatial and space-time Poisson processes, queueing, reversible processes, simulation, Brownian approximations, and varied Markovian models.

The technical level of the volume is between that of introductory texts that focus on highlights of applied stochastic processes, and advanced texts that focus on theoretical aspects of processes. Intended readers are researchers and graduate students in mathematics, statistics, operations research, computer science, engineering, and business.

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Papers should include: (i) a **short abstract** of 4–10 lines giving a non-mathematical description of the subject matter and results; (ii) a list of **keywords** detailing the contents; and (iii) a list of **classifications**, using the 2000 Mathematics Subject Classification scheme (http://www.ams.org/msc/). Letters to the Editor need not include these. To assist authors in writing papers in the Applied Probability style, they may use the LaTeX class file aptpub.cls, available from http://www.appliedprobability.org/. Use of this class file is not a condition of submission, but will considerably increase the speed at which papers are processed.

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