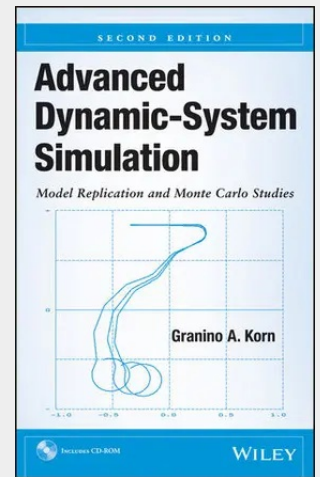


Advanced Dynamic-System Simulation: Model Replication and Monte Carlo Studies [With CDROM]

A unique, hands-on guide to interactive modeling and simulation of engineering systems. This book describes advanced, cutting-edge techniques for dynamic system simulation using the DESIRE modeling/simulation software package. It offers detailed guidance on how to implement the software, providing scientists and engineers with powerful tools for creating simulation scenarios and experiments for such dynamic systems as aerospace vehicles, control systems, or biological systems. Along with two new chapters on neural networks, Advanced Dynamic-System Simulation, Second Edition revamps and updates all the material, clarifying explanations and adding many new examples. A bundled CD contains an industrial-strength version of OPEN DESIRE as well as hundreds of program examples that readers can use in their own experiments. The only book on the market to demonstrate model replication and Monte Carlo simulation of real-world engineering systems, this volume:

- * Presents a newly revised systematic procedure for difference-equation modeling
- * Covers runtime vector compilation for fast model replication on a personal computer
- * Discusses parameter-influence studies, introducing very fast vectorized statistics computation
- * Highlights Monte Carlo studies of the effects of noise and manufacturing tolerances for control-system modeling
- * Demonstrates fast, compact vector models of neural networks for control engineering
- * Features vectorized programs for fuzzy-set controllers, partial differential equations, and agro-ecological modeling

Advanced Dynamic-System Simulation, Second Edition is a truly useful resource for researchers and design engineers in control and aerospace engineering, ecology, and agricultural planning. It is also an excellent guide for students using DESIRE.



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