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Titolo	Chemical Master Equation for Large Biological Networks : State-space Expansion Methods Using AI // by Don Kulasiri, Rahul Kosarwal
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Soggetti	Mathematical physics Computer simulation Bioinformatics Biomathematics Computational intelligence Artificial intelligence Computational Physics and Simulations Computational and Systems Biology Mathematical and Computational Biology Computational Intelligence Artificial Intelligence
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Nota di contenuto	1. Introduction -- 2. A Review and Challenges in Chemical Master Equation -- 3. Visualizing Markov Process through Graphs and Trees -- 4. Intelligent State Projection -- 5. Comparative Study And Analysis of Methods and Models -- 6. A Large Model Case Study: Solving CME for G1/S Checkpoint Involving the DNA-damage Signal Transduction Pathway -- 7. An Integrated Large Model Case Study: Solving CME for Oxidative Stress Adaptation in the Fungal Pathogen Candida Albicans.
Sommario/riassunto	This book highlights the theory and practical applications of the chemical master equation (CME) approach for very large biochemical networks, which provides a powerful general framework for model building in a variety of biological networks. The aim of the book is to not only highlight advanced numerical solution methods for the CME,

but also reveal their potential by means of practical examples. The case studies presented are mainly from biology; however, the applications from novel methods are discussed comprehensively, underlining the interdisciplinary approach in simulation and the potential of the chemical master equation approach for modelling bionetworks. The book is a valuable guide for researchers, graduate students, and professionals alike.
