
Contents

Part I Model Selection

- Mini-Transplants for Chronic Myelogenous Leukemia: A Modeling Perspective**
Peter S. Kim, Peter P. Lee, Doron Levy 3
- Modeling of the HIV/AIDS Infection: An Aid for an Early Diagnosis of Patients**
Djomangan Adama Ouattara, Claude H. Moog 21
- A Multiscale Model for the Selection Control of Ovulatory Follicles**
Nki Echenim, Frédérique Clément, Michel Sorine 45
- Robotics Insights for the Modeling of Visually Guided Hand Movements in Primates**
Philippe Souères, Christophe Jouffrais, Simona Celebrini, Yves Trotter 53

Part II Models for System Analysis

- Monotone and Near-Monotone Systems**
Eduardo D. Sontag 79
- System and Control Theory Furthers the Understanding of Biological Signal Transduction**
Eric Bullinger, Rolf Findeisen, Dimitrios Kalamatianos, Peter Wellstead 123
- Piecewise-Linear Models of Genetic Regulatory Networks: Theory and Example**
Frédéric Grognard, Hidde de Jong, Jean-Luc Gouzé 137
- Modelling and Analysis of Cell Death Signalling**
Thomas Eißing, Steffen Waldherr, Frank Allgöwer 161

A Petri Net Approach to Persistence Analysis in Chemical Reaction Networks	
<i>David Angeli, Patrick De Leenheer, Eduardo Sontag</i>	181
Geometric Ideas in the Stability Analysis of Delay Models in Biosciences	
<i>Silviu-Iulian Niculescu, Constantin-Irinel Morărescu, Wim Michiels, Keqin Gu</i>	217
<hr/>	
Part III Analysis and Control Aspects	
<hr/>	
Modeling and Control of Anesthetic Pharmacodynamics	
<i>Carolyn Beck, Hui-Hung Lin, Marc Bloom</i>	263
Direct Adaptive Control of Nonnegative and Compartmental Dynamical Systems with Time Delay	
<i>VijaySekhar Chellaboina, Wassim M. Haddad, Jayanthy Ramakrishnan, Qing Hui</i>	291
Analysis and Control of Dynamical Biological Systems in Presence of Limitations	
<i>Isabelle Queinnec, Sophie Tarbouriech, Germain Garcia</i>	317
Index	339