1.	Record Nr.	UNISA996466445203316
	Titolo	Hybrid Systems Biology [[electronic resource]] : 6th International Workshop, HSB 2019, Prague, Czech Republic, April 6-7, 2019, Revised Selected Papers / / edited by Milan eška, Nicola Paoletti
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
	ISBN	3-030-28042-X
	Edizione	[1st ed. 2019.]
	Descrizione fisica	1 online resource (XVI, 181 p. 67 illus., 39 illus. in color.)
	Collana	Lecture Notes in Bioinformatics ; ; 11705
	Disciplina	572.8
	Soggetti	Bioinformatics Numerical analysis Mathematical statistics Computer science—Mathematics Computational Biology/Bioinformatics Numeric Computing Probability and Statistics in Computer Science Math Applications in Computer Science
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Includes index.
	Nota di contenuto	A multimodular system to study the impact of a focal lesion in neuronal cell cultures -- Reachability analysis and hybrid systems biology - In Memoriam Oded Maler -- Reaction networks, oscillatory motifs and parameter estimation in biochemical systems -- Fixed-point computation of equilibria in biochemical regulatory networks -- Rejection-based simulation of stochastic spreading processes on complex networks -- Controlling noisy expression through auto regulation of burst frequency and protein stability -- Extracting landscape features from single particle trajectories -- A hybrid HMM approach for the dynamics of DNA methylation -- Using a hybrid approach to model central carbon metabolism across the cell cycle -- Data-informed parameter synthesis for population Markov chains-. rPrism - A software for reactive weighted state transition models -- Hybrid modeling of metabolic-regulatory networks.

Sommario/riassunto

This book constitutes the thoroughly refereed proceedings of the 6th International Workshop on Hybrid Systems Biology, HSB 2019, held in Prague, Czech Republic, in April 2019. The 8 full papers presented in this book together with 1 short paper and 3 invited papers were carefully reviewed and selected from 13 submissions. They cover topics such as: modeling and analysis of metabolic, signaling, and genetic regulatory networks in living cells; models of tissues, organs, physiological models; models and methods coping with incomplete, uncertain and heterogeneous information including learning for biological systems, parametric synthesis and inference; stochastic and hybrid models in biology; hierarchical systems for multi-scale, multi-domain analysis; abstraction, approximation, discretization, and model reduction techniques; modeling, analysis and design for synthetic biology, cyber-biological systems and biomedical studies (e.g. therapies, teleoperation); game-theoretical frameworks and population models in biology (e.g. mixed-effects and Bayesian modeling); biological applications of quantitative and formal analysis techniques (e.g. reachability computation, model checking, abstract interpretation, bifurcation theory, stability and sensitivity analysis); efficient techniques for combined and heterogeneous (stochastic/deterministic, spatial/non-spatial) simulations for biological models; modeling languages and logics for biological systems with related analysis and simulation tools; and control architectures of biological systems including biology-in-the-loop systems and bio-robotics. .