Set-membership Estimation, Analysis, and Experimental Design for Biological Systems

By Steffen Borchers

Shaker Verlag Aug 2013, 2013. Taschenbuch. Book Condition: Neu. 211x146x15 mm. Neuware - Studying biological processes by using dynamical models is a key approach in systems biology. To obtain a reliable model or to improve an existing one, system theoretical methods are required which are suited, first and foremost, for nonlinear dynamical systems and uncertain data. In this thesis, we develop set-based methods to address several theoretical and practical issues encountered when modeling biological processes. The proposed methods are based on describing uncertainty of the available data and disturbances by bounded sets, semidefinite programming relaxations, and set-membership estimation techniques to obtain set-valued outer-estimates of the parameters, states, or inputs. Overall, the proposed methods are applicable to polynomial dynamical systems of moderate size, they yield a robust perspective because uncertainties are taken explicitly into account, and they provide guaranteed and conclusive results. 148 pp. Englisch.

READ ONLINE
[1.35 MB]

Reviews

The ebook is great and fantastic. We have read and i also am sure that i am going to likely to go through once again again down the road. Once you begin to read the book, it is extremely difficult to leave it before concluding.
-- Erica Turcotte

Completely among the finest publication I have got possibly read through. It really is rally exciting throgh reading through period. You are going to like how the writer compose this publication.
-- Modesta Stamm PhD