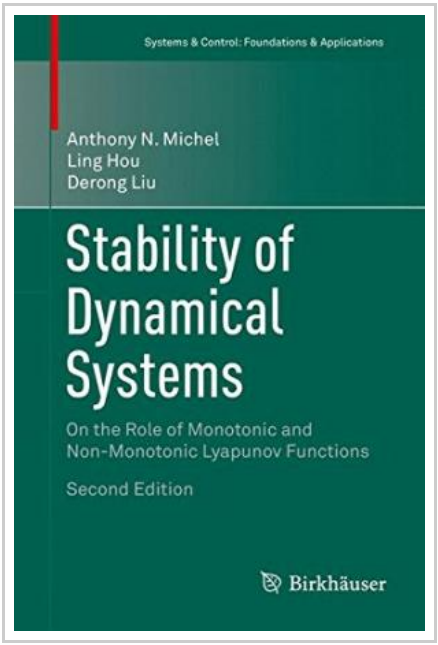

Stability of Dynamical Systems: On the Role of Monotonic and Non-Monotonic Lyapunov Functions: 2015 (2nd Revised edition)

By Anthony N. Michel, Ling Hou, Derong Liu

Birkhauser Verlag AG. Hardback. Book Condition: new. BRAND NEW, Stability of Dynamical Systems: On the Role of Monotonic and Non-Monotonic Lyapunov Functions: 2015 (2nd Revised edition), Anthony N. Michel, Ling Hou, Derong Liu, The second edition of this textbook provides a single source for the analysis of system models represented by continuous-time and discrete-time, finite-dimensional and infinite-dimensional, and continuous and discontinuous dynamical systems. For these system models, it presents results which comprise the classical Lyapunov stability theory involving monotonic Lyapunov functions, as well as corresponding contemporary stability results involving non-monotonic Lyapunov functions. Specific examples from several diverse areas are given to demonstrate the applicability of the developed theory to many important classes of systems, including digital control systems, nonlinear regulator systems, pulse-width-modulated feedback control systems, and artificial neural networks. The authors cover the following four general topics: - Representation and modeling of dynamical systems of the types described above - Presentation of Lyapunov and Lagrange stability theory for dynamical systems defined on general metric spaces involving monotonic and non-monotonic Lyapunov functions - Specialization of this stability theory to finite-dimensional dynamical systems - Specialization of this stability theory to infinite-dimensional dynamical systems Replete with examples

Reviews

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