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discontinuous right-hand side
1.1.4 Sliding modes. Extended nonlinearity. Example
; 1.2 Systems of Differential Equations with Multiple-Valued Right-Hand Sides (Differential Inclusions)
1.2.1 Concept of a solution of a system of differential equations with a multivalued right-hand side the local existence theorem the theorems on continuation of solutions and continuous dependence on initial values
1.2.2 ""Extended"" nonlinearities ; 1.2.3 Sliding modes
1.3 Dichotomy and Stability 1.3.1 Basic definitions
; 1.3.2 Lyapunov-type lemmas ; 2. Auxiliary Algebraic Statements on Solutions of Matrix Inequalities of a Special Type
2.1 Algebraic Problems that Occur when Finding Conditions for the Existence of Lyapunov Functions from Some Multiparameter Functional Class. Circle Criterion. Popov Criterion

Sommario/riassunto

This book presents a development of the frequency-domain approach to the stability study of stationary sets of systems with discontinuous nonlinearities. The treatment is based on the theory of differential inclusions and the second Lyapunov method. Various versions of the Kalman-Yakubovich lemma on solvability of matrix inequalities are presented and discussed in detail. It is shown how the tools developed can be applied to stability investigations of relay control systems, gyroscopic systems, mechanical systems with a Coulomb friction, nonlinear electrical circuits, cellular neural networks