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Titolo	Stability of stationary sets in control systems with discontinuous nonlinearities [[electronic resource] /] / V.A. Yakubovich, G.A. Leonov, A. Kh. Gelig
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Descrizione fisica	1 online resource (352 p.)
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Altri autori (Persone)	LeonovG. A (Gennadii Alekseevich) GeligArkadii Khaimovich
Disciplina	629.836
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Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 323-332) and index.
Nota di contenuto	Contents ; Preface ; List of Notations ; 1. Foundations of Theory of Differential Equations with Discontinuous Right-Hand Sides ; 1.1 Notion of Solution to Differential Equation with Discontinuous Right-Hand Side 1.1.1 Difficulties encountered in the definition of a solution. Sliding modes 1.1.2 The concept of a solution of a system with discontinuous nonlinearities accepted in this book. Connection with the theory of differential equations with multiple-valued right-hand sides 1.1.3 Relation to some other definitions of a solution to a system with

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

2. Record Nr. UNINA9910257378903321

Autore	Candelpergher Bernard
Titolo	Ramanujan summation of divergent series / / by Bernard Candelpergher
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Collana	Lecture Notes in Mathematics, , 0075-8434 ; ; 2185
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Soggetti	Sequences (Mathematics) Functions of complex variables Number theory Successions (Matemàtica) Nombres, Teoria de Funcions de variables complexes Sequences, Series, Summability Functions of a Complex Variable Number Theory
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Nota di contenuto	Introduction: The Summation of Series -- 1 Ramanujan Summation -- 3 Properties of the Ramanujan Summation -- 3 Dependence on a Parameter -- 4 Transformation Formulas -- 5 An Algebraic View on the Summation of Series -- 6 Appendix -- 7 Bibliography -- 8 Chapter VI of the Second Ramanujan's Notebook.
Sommario/riassunto	The aim of this monograph is to give a detailed exposition of the summation method that Ramanujan uses in Chapter VI of his second Notebook. This method, presented by Ramanujan as an application of the Euler-MacLaurin formula, is here extended using a difference equation in a space of analytic functions. This provides simple proofs of theorems on the summation of some divergent series. Several examples and applications are given. For numerical evaluation, a formula in terms of convergent series is provided by the use of Newton

interpolation. The relation with other summation processes such as those of Borel and Euler is also studied. Finally, in the last chapter, a purely algebraic theory is developed that unifies all these summation processes. This monograph is aimed at graduate students and researchers who have a basic knowledge of analytic function theory.