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Autore	Leonov G. A (Gennadii Alekseevich)
Titolo	Mathematical problems of control theory [[electronic resource]] : an introduction / / Gennady A. Leonov
Pubbl/distr/stampa	Singapore ; ; River Edge, NJ, : World Scientific, c2001
ISBN	1-281-95140-4 9786611951405 981-279-985-0
Descrizione fisica	1 online resource (182 p.)
Collana	Series on stability, vibration and control of systems, Series A ; ; 4
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Soggetti	Control theory - Mathematical models Electronic books.
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. 167-169) and index.
Nota di contenuto	Contents; Preface; Chapter 1 The Watt governor and the mathematical theory of stability of motion; 1.1 The Watt flyball governor and its modifications; 1.2 The Hermite-Mikhailov criterion; 1.3 Theorem on stability by the linear approximation 1.4 The Watt governor transient processes Chapter 2 Linear electric circuits. Transfer functions and frequency responses of linear blocks; 2.1 Description of linear blocks; 2.2 Transfer functions and frequency responses of linear blocks; Chapter 3 Controllability, observability, stabilization; 3.1 Controllability 3.2 Observability 3.3 A special form of the systems with controllable pair (A,b); 3.4 Stabilization. The Nyquist criterion; 3.5 The time-varying stabilization. The Brockett problem; Chapter 4 Two-dimensional control systems. Phase portraits; 4.1 An autopilot and spacecraft orientation system 4.2 A synchronous electric machine control and phase locked loops 4.3 The mathematical theory of populations; Chapter 5 Discrete systems; 5.1 Motivation; 5.2 Linear discrete systems; 5.3 The discrete phase locked loops for array processors Chapter 6 The Aizerman conjecture. The Popov method Bibliography; Index

Sommario/riassunto	This book shows clearly how the study of concrete control systems has motivated the development of the mathematical tools needed for solving such problems. In many cases, by using this apparatus, far-reaching generalizations have been made, and its further development will have an important effect on many fields of mathematics. In the book a way is demonstrated in which the study of the Watt flyball governor has given rise to the theory of stability of motion. The criteria of controllability, observability, and stabilization are stated. Analysis is made of dynamical systems, which describe a

2.

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Autore	Barrentine, Larry B.
Titolo	An introduction to design of experiments : a simplified approach / Larry B. Barrentine
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Classificazione	AMS 62K QA279.B37
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Note generali	Includes index