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Autore	Borutzky Wolfgang
Titolo	Linear Multivariable Control Engineering Using GNU Octave / / by Wolfgang Borutzky
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ISBN	3-031-44508-2
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (363 pages)
Disciplina	629.895
Soggetti	Control engineering Telecommunication Automation Control and Systems Theory Communications Engineering, Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Introduction -- Objectives of a control system -- Multiple Input Multiple Output Systems -- Observability -- Controllability -- More on Controllability and Observability -- Stability of Multivariable Systems -- Closed Loop Systems -- State Feedback -- Optimal Control -- Robust Control -- Linear Matrix Inequalities in Control -- Some Useful Mathematical Basics -- Conclusion.
Sommario/riassunto	This textbook presents an in-depth introductory survey of several fundamental advanced control concepts and techniques all ranging from modern ideas. The book emphasizes ideas, an understanding of key concepts, methodologies, and results. In line with this, the book addresses master’s students in the overlap of engineering and computer science as well as engineers working in various application fields and interested in useful control techniques and less in system theories appealing from a mathematical point of view. The book aims to show what methods and results learned for single-variable systems are also applicable to multivariable systems, what is different and why. The structured text covers a broad spectrum of topics from decentralized control to the use of linear matrix inequalities (LMIs). Methods and results are illustrated by many examples and using free,

open source mathematical software, predominately GNU Octave. In some cases, the free mathematical software package Scilab is also used. The book features exercises and examples throughout. Presents an introductory survey of fundamental advanced control concepts and techniques ranging from classical to more modern ones; Describes which techniques in single-variable control can be adopted in multivariable control and addresses modern control techniques such as LMIs; Features exercises, examples, and GNU Octave script listings; Provides relevant freely available lecture notes collected from the Internet and an appendix with references for further reading.