1. Record Nr. UNINA9910734095203321

Autore	Caravani Paolo
Titolo	Modern linear control design : a time-domain approach / / Paolo Caravani
Pubbl/distr/stampa	New York : , : Springer, , 2013
ISBN	1-4614-6943-0
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (xi, 114 pages) : illustrations (some color)
Collana	Gale eBooks
Disciplina	629.8
Soggetti	Linear control systems - Design
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to the Control Problem -- SIMO, x observed, w = 0 -- SISO, x unobserved, w = 0 -- MIMO, x observed, w = 0 -- MIMO, x unobserved, w = 0 -- MIMO, x observed, w 6= 0 unobserved, norm-bounded -- MIMO, x;w observed, w 6= 0 -- MIMO, x;w unobserved, w 6= 0 exogenously generated.
Sommario/riassunto	This book offers a compact introduction to modern linear control design. The simplified overview presented of linear time-domain methodology paves the road for the study of more advanced non-linear techniques. Only rudimentary knowledge of linear systems theory is assumed - no use of Laplace transforms or frequency design tools is required. Emphasis is placed on assumptions and logical implications, rather than abstract completeness; on interpretation and physical meaning, rather than theoretical formalism; on results and solutions, rather than derivation or solvability. The topics covered include transient performance and stabilization via state or output feedback; disturbance attenuation and robust control; regional eigenvalue assignment and constraints on input or output variables; asymptotic regulation and disturbance rejection. Lyapunov theory and Linear Matrix Inequalities (LMI) are discussed as key design methods. All methods are demonstrated with MATLAB to promote practical use and comprehension. · Provides a single-source, compact and practical introduction to modern linear control design, including fast and effective design methods; · Includes a state-of-the-art overview of time-domain linear methods; · Covers methods

typically dispersed in numerous books, such as constraints on control variables, control robustness and the Asymptotic Regulation problem;
· Uses examples from numerous application fields with solutions in MATLAB.