1. Record Nr. UNINA9910789221403321

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Titolo	An Introduction to Infinite-Dimensional Linear Systems Theory [[electronic resource] /] / by Ruth F. Curtain, Hans Zwart
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 1995
ISBN	1-4612-4224-X
Edizione	[1st ed. 1995.]
Descrizione fisica	1 online resource (XVIII, 698 p.)
Collana	Texts in Applied Mathematics, , 0939-2475 ; ; 21
Disciplina	515
Soggetti	Mathematical analysis Analysis (Mathematics) Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
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8.4 Exercises -- 8.5 Notes and references -- 9 Robust Finite-Dimensional Controller Synthesis -- 9.1 Closed-loop stability and coprime factorizations -- 9.2 Robust stabilization of uncertain systems -- 9.3 Robust stabilization under additive uncertainty -- 9.4 Robust stabilization under normalized left-coprime-factor uncertainty -- 9.5 Robustness in the presence of small delays -- 9.6 Exercises -- 9.7 Notes and references -- A. Mathematical Background -- A.1 Complex analysis -- A.2 Normed linear spaces -- A.2.1 General theory -- A.2.2 Hilbert spaces -- A.3 Operators on normed linear spaces -- A.3.1 General theory -- A.3.2 Operators on Hilbert spaces -- A.4 Spectral theory -- A.4.1 General spectral theory -- A.4.2 Spectral theory for compact normal operators -- A.5 Integration and differentiation theory -- A.5.1 Integration theory -- A.5.2 Differentiation theory -- A.6 Frequency-domain spaces -- A.6.1 Laplace and Fourier transforms -- A.6.2 Frequency-domain spaces -- A.6.3 The Hardy spaces -- A.7 Algebraic concepts -- A.7.1 General definitions -- A.7.2 Coprime factorizations over principal ideal domains -- A.7.3 Coprime factorizations over commutative integral domains -- References -- Notation.

Sommario/riassunto

Infinite dimensional systems is now an established area of research. Given the recent trend in systems theory and in applications towards a synthesis of time- and frequency-domain methods, there is a need for an introductory text which treats both state-space and frequency-domain aspects in an integrated fashion. The authors' primary aim is to write an introductory textbook for a course on infinite dimensional linear systems. An important consideration by the authors is that their book should be accessible to graduate engineers and mathematicians with a minimal background in functional analysis. Consequently, all the mathematical background is summarized in an extensive appendix. For the majority of students, this would be their only acquaintance with infinite dimensional systems.