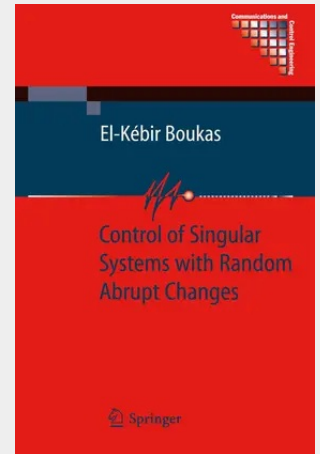


Control of Singular Systems with Random Abrupt Changes

This book deals with the class of singular systems with random abrupt changes also known as singular Markovian jump systems. Various problems and their robustness are tackled. The book examines both the theoretical and practical aspects of the control problems from the angle of the structural properties of linear systems. It can be used as a textbook as well as a reference for researchers in control or mathematics with interest in control theory.

Singular systems also referred to as descriptor systems, implicit systems, generalized state-space systems, differential-algebraic systems or semi-state systems (see [43, 76]) represents an interesting class of dynamical systems since it combines differential equations and algebraic equations and generalizes the linear time invariant model which is extensively used in linear control theory. This class of systems has been used to model varieties of systems like economics, chemical processes, mechanics, electrical systems, etc. Singular systems have attracted a lot of researchers from the mathematical and control communities and a great number of fundamental notions and results in control and systems theory based on linear time-invariant systems with state space representation have been successfully extended to the class of singular systems. For more details on what it has been done on this subject we refer the reader to [3, 4, 51, 75, 122, 123, 127, 50, 109, 112, 122, 124, 126], and the references therein. More specifically, we tackled the stability and the stabilizability of the class of linear continuous-time singular systems and many results have been reported in the literature in the LMI setting. Among these results we quote those of [14]. The robust stability and the robust stabilization have also been studied. Many types of uncertainties have been considered among them we quote the norm bounded form, the linear fractional transformation (LFT, which generalizes the norm bounded type) and polytopic form. The H_∞ control and the filtering problems have also been treated and interesting results were reported in the literature.



106,99 €

99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783540743446

Medium: Buch

ISBN: 978-3-540-74344-6

Verlag: Springer Berlin Heidelberg

Erscheinungstermin: 11.01.2008

Sprache(n): Englisch

Auflage: 2008

Serie: Communications and Control Engineering

Produktform: Gebunden

Gewicht: 594 g

Seiten: 267

Format (B x H): 160 x 241 mm

