

1. Record Nr.	UNINA9910254245603321
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Titolo	Filtering and Control of Stochastic Jump Hybrid Systems // by Xiuming Yao, Ligang Wu, Wei Xing Zheng
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-31915-9
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (218 p.)
Collana	Studies in Systems, Decision and Control, , 2198-4190 ; ; 58
Disciplina	519.2
Soggetti	Control engineering System theory Control theory Control and Systems Theory Systems Theory, Control
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.
Nota di contenuto	Introduction -- Part I Robust Filtering -- Part II Robust Control.
Sommario/riassunto	This book presents recent research work on stochastic jump hybrid systems. Specifically, the considered stochastic jump hybrid systems include Markovian jump Ito stochastic systems, Markovian jump linear-parameter-varying (LPV) systems, Markovian jump singular systems, Markovian jump two-dimensional (2-D) systems, and Markovian jump repeated scalar nonlinear systems. Some sufficient conditions are first established respectively for the stability and performances of those kinds of stochastic jump hybrid systems in terms of solution of linear matrix inequalities (LMIs). Based on the derived analysis conditions, the filtering and control problems are addressed. The book presents up-to-date research developments and novel methodologies on stochastic jump hybrid systems. The contents can be divided into two parts: the first part is focused on robust filter design problem, while the second part is put the emphasis on robust control problem. These methodologies provide a framework for stability and performance analysis, robust controller design, and robust filter design for the considered systems. Solutions to the design problems are presented in

terms of LMIs. The book is a timely reflection of the developing area of filtering and control theories for Markovian jump hybrid systems with various kinds of imperfect information. It is a collection of a series of latest research results and therefore serves as a useful textbook for senior and/or graduate students who are interested in knowing 1) the state-of-the-art of linear filtering and control areas, and 2) recent advances in stochastic jump hybrid systems. The readers will also benefit from some new concepts, new models and new methodologies with practical significance in control engineering and signal processing.

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