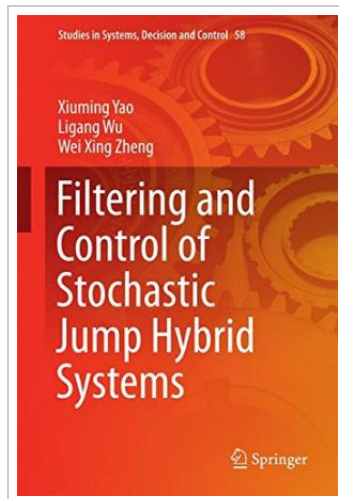




Filtering and Control of Stochastic Jump Hybrid Systems (Studies in Systems, Decision and Control)

By Ligang Wu

Springer. Hard cover. Condition: New. 250 pages. 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...



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Reviews

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