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| Autore | Wang Guoliang |
| Titolo | Analysis and design of singular Markovian jump systems / / by Guoliang Wang, Qingling Zhang, Xinggang Yan |
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| ISBN | 3-319-08723-1 |
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| Descrizione fisica | 1 online resource (287 p.) |
| Disciplina | 519<br>519.2<br>620<br>629.8 |
| Soggetti | Automatic control<br>System theory<br>Probabilities<br>Control and Systems Theory<br>Systems Theory, Control<br>Probability Theory and Stochastic Processes |
| 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 at the end of each chapters and index. |
| Nota di contenuto | Introduction -- Stability -- Stabilization -- H-infinity Control -- Observer-based Feedback Stabilization -- Filtering -- Adaptive Control -- Applications of a Markov Process. |
| Sommario/riassunto | This monograph is an up-to-date presentation of the analysis and design of singular Markovian jump systems (SMJSs) in which the transition rate matrix of the underlying systems is generally uncertain, partially unknown and designed. The problems addressed include stability, stabilization, H control and filtering, observer design, and adaptive control. applications of Markov process are investigated by using Lyapunov theory, linear matrix inequalities (LMIs), S-procedure and the stochastic Barbalat's Lemma, among other techniques. Features of the book include: study of the stability problem for SMJSs with general transition rate matrices (TRMs); stabilization for SMJSs by TRM |

design, noise control, proportional-derivative and partially mode-dependent control, in terms of LMIs with and without equation constraints; mode-dependent and mode-independent H control solutions with development of a type of disordered controller; observer-based controllers of SMJSs in which both the designed observer and controller are either mode-dependent or mode-independent; consideration of robust H filtering in terms of uncertain TRM or filter parameters leading to a method for totally mode-independent filtering development of LMI-based conditions for a class of adaptive state feedback controllers with almost-certainly-bounded estimated error and almost-certainly-asymptotically-stable corresponding closed-loop system states applications of Markov process on singular systems with norm bounded uncertainties and time-varying delays. Analysis and Design of Singular Markovian Jump Systems contains valuable reference material for academic researchers wishing to explore the area. The contents are also suitable for a one-semester graduate course.  .