Record Nr. UNINA9910141495503321 Autore Chadli Mohammed Titolo Multiple models approach in automation [[electronic resource]]: takagi-sugeno fuzzy systems / / Mohammed Chadli, Pierre Borne; series editor, Bernard Dubuisson London, : ISTE Pubbl/distr/stampa Hoboken, N.J., : John Wiley and Sons Inc, 2013 **ISBN** 1-118-57732-9 1-299-18659-9 1-118-57729-9 1-118-57722-1 Edizione [1st edition] Descrizione fisica 1 online resource (204 p.) Collana Automation - control and industrial engineering series Altri autori (Persone) BornePierre **DubuissonBernard** Disciplina 004.1 629.80151 Soggetti Automation Fuzzy systems 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 and index. Nota di contenuto Title Page; Contents; Notations; Introduction; Chapter 1. Multiple Model Representation: 1.1. Introduction: 1.2. Techniques for obtaining multiple models; 1.2.1. Construction of multiple models by identification; 1.2.2. Multiple model construction by linearization; 1.2.3. Multiple model construction by mathematical transformation: 1.2.4. Multiple model representation using the neural approach; 1.3. Analysis and synthesis tools; 1.3.1. Lyapunov approach; 1.3.2. Numeric tools: linear matrix inequalities; 1.3.3. Multiple model control techniques Chapter 2. Stability of Continuous Multiple Models 2.1. Introduction; 2.2. Stability analysis; 2.2.1. Exponential stability; 2.3. Relaxed stability; 2.4. Example; 2.5. Robust stability; 2.5.1. Norm-bounded uncertainties; 2.5.2. Structured parametric uncertainties; 2.5.3.

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Sommario/riassunto

Much work on analysis and synthesis problems relating to the multiple model approach has already been undertaken. This has been motivated by the desire to establish the problems of control law synthesis and full state estimation in numerical terms. In recent years, a general approach based on multiple LTI models (linear or affine) around various function points has been proposed. This so-called multiple model approach is a convex polytopic representation, which can be obtained either directly from a nonlinear mathematical model, through mathematical transformation or through linearizat

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