Record Nr. UNINA9910818698503321 Autore Nikravesh Seyed Kamaleddin Yadavar **Titolo** Nonlinear systems stability analysis: Lyapunov-based approach / / Seyed Kamaleddin Yadavar Nikravesh Boca Raton, : CRC Press, 2013 Pubbl/distr/stampa **ISBN** 1-315-21599-3 1-138-07277-X 1-351-83188-7 1-4665-6929-8 Edizione [1st ed.] Descrizione fisica 1 online resource (313 p.) SCI013060TEC007000TEC032000 Classificazione Disciplina 515.392 Soggetti Lyapunov stability Nonlinear control theory Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di contenuto Front Cover; Contents; Preface; Acknowledgments; Chapter 1 - Basic Concepts: Chapter 2 - Stability Analysis of Autonomous Systems: Chapter 3 - Stability Analysis of Nonautonomous Systems; Chapter 4 -Stability Analysis of Time-Delayed Systems: Chapter 5 - An Introduction to Stability Analysis of Linguistic Fuzzy Dynamic Systems; References; Appendix A1: Application of VLF in Nonlinear Power System Stabilization: Appendix A2: Proof of Theorem 3.8; Appendix A3: Stability Analysis of Nonlinear Systems via -Homogeneous Approximation Appendix A4: Stabilization of Model Predictive Control of Nonlinear Time-Delayed SystemsAppendix A5: Some New Notions for Symmetric Behavior of Matrices and Related Theorems; Back Cover Sommario/riassunto The equations used to describe dynamic properties of physical systems are often nonlinear, and it is rarely possible to find their solutions. Although numerical solutions are impractical and graphical techniques are not useful for many types of systems, there are different theorems and methods that are useful regarding qualitative properties of

nonlinear systems and their solutions-system stability being the most

crucial property. Without stability, a system will not have value.

Nonlinear Systems Stability Analysis: Lyapunov-Based Approach introduces advanced tools for stability analysis of no