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Nota di contenuto	Preface; Biography: Ilya Izrailevich Blekhman; Contents; 1. Huijgens' Synchronization: A Challenge H. Nijmeijer, A.Y. Pogromsky; 2. Lyapunov Quantities and Limit Cycles of Two-dimensional Dynamical Systems N.V. Kuznetsov, G.A. Leonov; 3. Absolute Observation Stability for Evolutionary Variational Inequalities G.A. Leonov, V. Reitman; 4. A Discrete-time Hybrid Lurie Type System V.N. Belykh, B. Ukrainsky; 5. Frequency Domain Performance Analysis of Marginally Stable LTI Systems with Saturation R.A. van den Berg, A.Y. Pogromsky, J.E. Rooda 6. Reduction of Steady-State Vibrations in a Piecewise Linear Beam System using Proportional and Derivative Control R.H.B. Fey, R.M.T. Wouters, H. Nijmeijer7. Hybrid Quantised Observer for Multi-input-multi- output Nonlinear Systems A.L. Fradkov, B.R. Andrievskiy, R.J. Evans; 8. Tracking Control of Multiconstraint Nonsmooth Lagrangian Systems C. Morarescu, B. Brogliato, T. Nguyen; 9. Stability and Control

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Sommario/riassunto

The papers in this edited volume aim to provide a better understanding of the dynamics and control of a large class of hybrid dynamical systems that are described by different models in different state space domains. They not only cover important aspects and tools for hybrid systems analysis and control, but also a number of experimental realizations. Special attention is given to synchronization - a universal phenomenon in nonlinear science that gained tremendous significance since its discovery by Huygens in the 17th century. Possible applications of the results introduced in the book includ