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Nonlinearity -- Parametric Nonlinearity Identification of a Gearbox From Measured Frequency Response Data -- Nonlinear Gear Transmission System Numerical Dynamic Analysis and Experimental Validation -- A Stochastic Framework for Subspace Identification of a Strongly Nonlinear Aerospace Structure -- Identification of Agricultural Tyres' Handling Characteristics From Full Scale Experimental Tests -- Nonparametric Analysis and Nonlinear State-space Identification: A Benchmark Example -- Nonlinear Black-box Identification of a Mechanical Benchmark System -- Suppression of Multiple Order Friction Torque Fluctuations With Modulated Actuation Pressure -- Nonlinear Structural Coupling -- Experimental Application -- State Estimation in Nonlinear Structural Systems -- An Efficient Exponential Integrator for Large Stiff Systems: Part 1: Theoretical Investigation -- An Efficient Exponential Integrator for Large Stiff System: Part 2: Symplecticity and Global Error Analysis -- Vibration Suppression of a Flexible Parallel Kinematic Manipulator -- Analysis of Nonlinear System Response to an Impulse Excitation -- Experimental Evaluation of Veering Crossing and Lock-in Occurring in Parameter Varying Systems.

| Sommario/riassunto | This critical collection examines a range of nonlinear dynamics, from nonlinear modal analysis to nonlinear systems to nonlinear modeling & simulation, as presented in early findings and case studies from the Proceedings of the 32nd IMAC, A Conference and Exposition on Structural Dynamics, 2014. The collection includes papers in the following general technical research areas: · Nonlinear Oscillations · Nonlinear Simulation Using Harmonic Balance · Nonlinear Modal Analysis · Nonlinear System Identification · Nonlinear Modeling & Simulation · Nonlinearity in Practice · Nonlinear Systems · Round Robin on Nonlinear System Identification. |