proposed for the above analysis and synthesis problems by converting them into "scaled" H_∞ analysis and control problems which do not involve parameter uncertainty and nonlinearities.

039 Sufficient Conditions for the Robust Stability of Systems with Multiaffine Parameter Dependence
B.D.O. Anderson, F.J. Kraus, M. Mansour, S. Dasgupta, pp 168-171

A number of robust stability problems take the following form: a polynomial has real coefficients which are multiaffine in real parameters that are confined to a box in parameter space. An efficient method is required for checking the stability of this set of polynomials. Two sufficient conditions are presented in this paper. They involve checking certain properties at the corners and edges of the parameter space box.

040 On the Relation Between Local and Global Linearization of Bilinear Systems
S. Čelikovský, pp 172-175

The problem of finding a global state space transformation and a type of global feedback to transform a given single-input homogeneous bilinear system into a controllable linear system is considered. The comparison with the local version of this problem is performed. The possible equivalence of these two notions has recently been found to be valid in the case of the state linearization. Complete analysis of both locally and globally feedback-linearizable homogeneous bilinear systems in R^2 and R^3 shows the validity of such a conjecture for the small-dimensional case.

041 Differential Geometric Structures of Stable State Feedback Systems with Dual Connections
A. Ohara, S. Amari, pp 176-179

This paper gives new approach to discuss the differential geometric structures of stable and stable state feedback systems. To investigate them, pairs of dual connections are introduced. Some of these connections characterize the geometric structures of stable state feedback systems.

042 Integrators and Nonlinear Stabilization
A. Iggidr, G. Sallet, pp 180-183

This paper studies global stabilization, by means of the smooth state feedback of systems (S), obtained by adding an integrator to a general nonlinear system (Σ). It is shown how to compute the stabilizing feedback for (S) when a strict Lyapunov function for (Σ) is difficult to find.

043 On the Characteristic Modes of a Rigid Body Under Forces
H. Bourdache-Siguerdidjane, pp 184-186

The characteristic modes of a rigid body under forces are determined from its analytical solution. This solution may be expressed in terms of eigenvalues and eigenvectors. The nonlinear feedback control law is deduced from the compatibility conditions of the differential equations.

044 Linearization of Bilinear Models with Bounded Inputs
L. del Re, L. Guzella, pp 188-191

The use of bilinear models to control nonlinear plants with bounded inputs is discussed. It is shown that by redefinition of the problem as a feedback loop with a saturating complementary function, and looking for extreme values on the boundary of the physically reachable region, leads to a reasonable estimate of the stability conditions in the presence of bounds.

045 Uniform Boundary Stabilization of a Dynamical von Kármán Plate
M.E. Bradley, I. Lasalecka, pp 192-195

In this paper, global exponential decay rates are developed for a von Kármán plate. In previous work, geometric constraints have been placed upon the controlled portion of the boundary. In this paper all such geometric restrictions have been removed by using "sharp" trace regularity results based on microlocal analysis.

046 Easy Design of Deadbeat Control Using Plant Step Response Only*
J. Maršík, P. Klán, V. Strejc, pp 196-199

The work deals with a simple design of a digital pole-assignment control of unknown single-input-single output, time-variant linear plants. For this aim only the pertinent plant step response has to be known. The controller parameters result from a straightforward evaluation of the step response, without using any explicit procedure of plant structure and parameter identification, provided that the plant is minimum-phase. The condition of minimum phase leads, however, to certain constraints related to the choice of the sampling rate. Sometimes additional measures may be taken, especially if the continuous transfer function itself is nonminimum-phase.

047 Dynamic Disturbance Decoupling for Discrete Time Nonlinear Systems: A Solution in Terms of System Invariants
Ü. Kotta, pp 200-203

The paper considers the dynamic disturbance decoupling problem for a discrete-time nonlinear system locally around its equilibrium point. The necessary and sufficient conditions for local solvability of the problem in the case of unmeasurable disturbances are derived in terms of system-intrinsic structural parameters of the system, the so-called "invertibility" indices.

048 On the Control of a Class of Nonlinear Descriptor Systems: Non-Holonomic Mechanical Systems
F. Delebecque, R. Nikoukhah, pp 204-207

The equations of motion for a multibody mechanical system if of descriptor nature. This paper examines the open loop-control problem for such systems and illustrates the results with an example.

049 Nonlinear Control of a Planar Multi-Axis Servohydraulic Test Facility
H. Hahn, Xiaohang Zhang, K.-D. Leimbach, H.-J. Sommer, pp 208-211

This paper presents a nonlinear control concept of a planar multi-axis servohydraulic test facility. Based on