

**PROCEEDINGS OF THE
28th IEEE CONFERENCE ON
DECISION AND CONTROL**

**DECEMBER 13-15, 1989
HYATT REGENCY TAMPA HOTEL
TAMPA, FLORIDA**



**IEEE
Control
Systems
Society**

VOLUME 1 OF 3

89CH2642-7

8:45-9:15

Parallel Processing for the Load Flow of Power systems: The Approach and Applications 2173
F.M.A. Salam, L. Ni, S. Guo, X. Sun, *Michigan State University*

9:15-9:30

Power System Emergency Control Near Voltage Instability 2179
M.M. Begovic, A.G. Phadke, *Virginia Polytechnic Institute & State University*

9:30-10:00

A New Lyapunov Function for Interconnected Power System 2181
H.R. Pota, *Australian Defense Force Academy*
P.J. Moylan, *University of Newcastle, AUSTRALIA*

10:00-10:15

An Adaptive Deadbeat Stabilizer for Power System Dynamic Stability 2186
V. Rajkumar, *Indian Inst. of Science, Bangalore*

10:15-10:45

An Engineering-Oriented Robust Control Scheme for Motor Drives 2188
H.-A. Zhu, N.-N. Zheng, Xi'an Jiaotong University, PRC

10:45-11:00

Multivariable Self-tuning Control of a Coupled Electric-Drive Pilot Plant using Feedforward 2194
H. Lee, K.W. Lim, W.C. Lai, *National University of Singapore*

**Session: FA-12 Room: Garrison II & III
FEEDBACK SYSTEMS WITH FAST SWITCHING**

Organizer and

Chairperson: S.M. Meerkov, *University of Michigan*
Co-Chairperson: H. Sira-Ramirez, *Universidad de Los Andes, VENEZUELLA*

15-9:15 (I)

Variable Structure Systems and Binary Control 2196
V. Emelianov, *International Institute of Systems Science, S.S.R.*

15-9:45 (I)

Operating Regimes in Pulse Width Modulation Systems Design 2199
Sira-Ramirez, *Universidad de Los Andes, VENEZUELLA*

15-10:15 (I)

Robust Control of Linear Time-Invariant Plants Using Switching and Nonlinear Feedback 2205
P.P. Khargonekar, *University of Michigan*
K.R. Poolla, *University of Illinois, Urbana-Champaign*

15-10:45 (I)

Switching Control of Sampled Data Systems 2208
T. Kabamba, *University of Michigan*

10:45-11:15 (I)

Vibrational Feedback Control in the Problem of Absolute Stability 221
S.M. Meerkov, S. Lee, *University of Michigan*

**Session: FA-13 Room: Regency III
RESPONSE LIMITATIONS IN FEEDBACK SYSTEMS**

Organizer: M.K. Sain
CSS Technical Committee on Theory-
WG on Linear Multivariable Systems
Chairperson: M.K. Sain, *University of Notre Dame*
Co-Chairperson: P.J. Antsaklis, *University of Notre Dame*

15-8:45 (I)

Synthesis of Linear Time-Invariant Controllers from Specifications
B.P. Boyd, *Stanford University*

15-9:15 (I)

Limitations of Vibration Suppression in Flexible Space Structures 2211
W.C. Williams, *NASA Langley Research Center*
P.J. Antsaklis, *University of Notre Dame*

15-9:45 (I)

Qualitative Step Response Limitations of Linear Systems . 2221
H. McWilliams, *Allied-Signal Aerospace Company*
M.K. Sain, *University of Notre Dame*

15-10:15 (I)

Algebraic and Geometric Indices for Singular Systems 2228
F. Wyman, *Ohio State University*
Conte, *Università di Genova, ITALY*
M. Perdon, *Università di Padua, ITALY*

15-10:45 (I)

Digital Implementations of Linear Feedback Controllers: Qualitative Properties and Limitations 2233
N. Michel, *University of Notre Dame*
A. Farrell, *Charles Stark Draper Laboratory, MA*

**FRIDAY MORNING
December, 15, 1989**

**10:30-12:30 Regency I
CODE LECTURE**

Chairperson: J.K. Cullum, *IBM*
Co-Chairperson: H.A. Spang III, *GE*

Inspect the Unstable
Stein, *Honeywell, Inc.*