

# DISTINGUISHED LECTURER SERIES

T H E I N S T I T U T E F O R S Y S T E M S R E S E A R C H



**Petar V. Kokotovic**

Professor

Department of Electrical  
& Computer Engineering

University of California  
Santa Barbara

Monday, March 26, 5:00 p.m.

## Feedback Fundamentals: Old and New

Since the time of Bode, six-seven decades ago, exciting developments have expanded feedback theory to a wide diversity of systems: nonlinear, time-varying, optimal, adaptive, hybrid etc. How has this new knowledge enriched our understanding of feedback fundamentals formulated by Bode? Which of the fundamental properties are determined by systems themselves and which by the nature of feedback? Such questions will be addressed with a focus on inherent limits to feedback performance. New insights into structural causes of these limits will be given for nonlinear systems. It will be shown how some limits can be removed by requiring geometric path following instead of tracking of time signals.

### Biography

Petar V. Kokotovic has been active as control engineer, researcher and educator, first in his native Yugoslavia and then, from 1966 through 1990, at the University of Illinois, where he held the endowed Grainger Chair. In 1991 he joined the University of California, Santa Barbara where he directed the Center for Control Engineering and Computation until 2003. He has co-authored ten books and numerous articles contributing to sensitivity analysis, singular perturbation methods, and robust adaptive and nonlinear control. As a consultant to Ford, he contributed to the development of the first series of automotive computer controls. At General Electric, he participated in large scale power systems studies.

In collaboration with the United Technologies, he conducted research on jet engine axial compressor control. He is a Life Fellow of IEEE, Fellow of IFAC, and a member of National Academy of Engineering, USA. He received the 1983 and 1993 Outstanding IEEE Transactions Paper Awards and presented the 1991 Bode Prize Lecture. For his research he was recognized with the three highest control engineering awards: 1990 IFAC Quazza Medal, 1995 IEEE Control Systems Award, and 2002 AACC Richard E. Bellman Control Heritage Award. For his contributions to graduate education, he was recognized by the 2002 IEEE James H. Mulligan Jr. Education Medal.

### Reception

Monday, March 26, 2007, 4:30 p.m.  
First floor, Jeong H. Kim Building

### Roundtable discussion

Tuesday, March 27, 2007, 10:00 a.m.  
2168 A.V. Williams Building

### Lecture

Monday, March 26, 2007, 5:00 p.m.  
First floor, Jeong H. Kim Building

### Hosts

ISR Director Eyad Abed

**Questions? Call ISR at  
301-405-6615**

The  
Institute for  
**Systems**  
Research



A. JAMES CLARK  
SCHOOL OF ENGINEERING