COLLEGE OF ENGINEERING

Control Seminar

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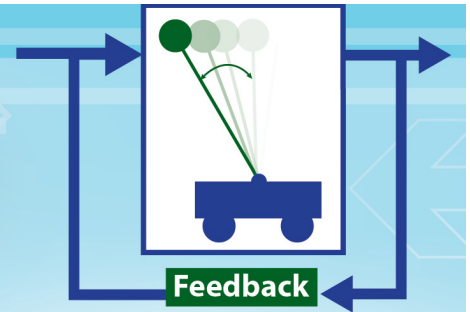
Koopman Operator Theory in Dynamical Systems and Control

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Friday, January 27, 2017
3:30 – 4:30 pm • 1500 EECS

ABSTRACT: Spectral operator-theoretic methods, such as those based on Koopman operator spectrum, hold the promise of a unifying approach to linear and nonlinear dynamical systems and control problems. We discuss current theory and practice of applications of Koopman operator methods in dynamical systems and control and its relationship with computational methods. We will also discuss the relationship between numerical methods (such as Dynamic Mode Decomposition) and Koopman Mode Decomposition, and extensions of theory to stability of nonlinear systems and control.

BIO: Igor Mezic came to UC Santa Barbara in 1995. Prior to that he was a Postdoctoral Research Fellow at the University of Warwick, UK. From 2000-2001, he also served as an Associate Professor in the Division of Engineering and Applied Science at Harvard University. Igor Mezic's research interests include the science and technology of energy efficiency dynamics, including building systems, micropower generation and power grids; dynamical systems theory of complex systems, including large-scale networked systems; mixing and separation in fluids across the scales with applications ranging from microfluidic phenomena to oceanographic flows; and nano- and micro-scale particle dynamics induced by dielectrophoresis and other electrokinetic phenomena, with applications to biotechnology.

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