

The Mohammed Dahleh Symposium

February 8-9, 2002
ENG II Pavilion

This symposium is dedicated to the memory of Mohammed Dahleh who was a professor of Dynamics and Control in the Department of Mechanical Engineering at UC Santa Barbara, and had wide-ranging interests spanning many scientific and literary disciplines. Presentations at the symposium feature new research directions where control and dynamics play a central role. These include systems biology, quantum control, fluid dynamics, and nanotechnology.



FRIDAY, FEB. 8th, 2002

- 8:30-8:45 Welcoming Remarks
 8:45-9:15 Petar Kokotovic: *Mohammed Dahleh's creative legacy*
CONTROL/COMMUNICATION
 9:15-9:40 Jeff Shamma: *A decomposition approach to distributed control*
 9:40-10:05 Petros Voulgaris: *Optimal control design under structural and communication constraints*
 10:05-10:30 Fernando Paganini: *A control theoretical look at internet congestion control*
 10:30-10:55 Nicola Elia: *Stabilization of Linear Systems with Quantized State Information*

Break

C. PHYSICS

- 11:15-11:55 John Doyle: *Robustness in multiscale physics*
 11:55-12:20 Igor Mezic: *Ergodic theory and control theory*

Lunch

QUANTUM CONTROL

- 1:30-2:10 Antony Peirce: *Fifteen years of quantum control: from concept to experiment*
 2:10-2:35 Hideo Mabuchi: *Control theory and foundations of quantum mechanics*
 2:35-3:00 D. D'Alessandro: *A survey on geometric control theory of quantum mechanical systems*
 3:00-3:25 Atac Imamoglu: *Controlling photons*

Break

BIOLOGY

- 3:45-4:10 Marie Csete: *Stem cells from the outside in*
 4:10-4:35 Mustafa Khammash: *Feedback regulation of bacterial stress response*
 4:35-5:15 Allen Tannenbaum: *Optimal Mass Transfer and Image Warping*

HANDS ON WORKSHOP & RECEPTION

- 5:30-7:00 Jean Carlson & Marie Dahleh: *Hands on demonstrations for kids and adults including physics circus, devil's bicycle, AFM and MEMS*

SATURDAY, FEB. 9th, 2002

CONTROL

- 9:00-9:40 Karl Astrom: *Control: the hidden technology*
 9:40-10:05 Anna Stefanopoulou: *Valves tapping in rhythm*
 10:05-10:30 Alexandre Megretski: *Robust design of stochastic automata*
 10:30-10:55 Andy Teel: *Why care about the regularity of the value function in discrete-time receding horizon optimal control?*

Break

COMPUTATION

- 11:15-11:40 Linda Petzold: *Sensitivity analysis for differential-algebraic equations*
 11:40-12:05 Tryphon Georgiou: *Power spectra consistent with covariance data: an inverse problem solvable using analytic interpolation theory*
 12:05-12:30 Alberto Tesi: *On convexification of distance problems: an LMI-based approach*

Lunch

NANOTECH

- 1:30-2:10 Arun Majumdar: *Mechanics and Manipulation of Biological Molecules*
 2:10-2:35 Murti Salapaka TBA
 2:35-3:00 Kimberly Turner: *Nonlinear dynamics in Microelectromechanical Systems: Sensor and Filter Applications*

Break

CONTROL/LEARNING

- 3:20-4:00 Antonio Vicino: *Identification and estimation: the set membership viewpoint*
 4:00-4:25 Andy Packard: *Prediction uncertainty from models and data*
 4:25-4:50 Mario Milanese: *Learning complex systems from data: the set membership approach*

Attendance is free, but registration is required by emailing:

mdsymp@engineering.ucsb.edu

This event will be **WEBCAST LIVE**, for details see:

<http://www.engineering.ucsb.edu/~mdsymp>