

MODELING, ESTIMATION & CONTROL: APPLICATIONS IN NEUROSCIENCE
DECEMBER 8, 2008 (8:30AM-6:00PM)
Fiesta Americana Grand Coral Beach
Cancun, Mexico

PLEASE FIND SPECIFIC ROOM FOR WORKSHOP AT CDC REGISTRATION DESK-INFORM THEM THAT YOU ARE A LECTURER FOR THIS WORKSHOP.

COFFEE & PASTRIES

OPENING REMARKS 8:30AM-8:40AM

MODELING THE BRAIN

Steve Massaquoi, Department of Electrical Engineering & Computer Science, MIT 8:40AM-9:20AM
"System Level Neuroengineering Modeling of the Nervous System-Part I"

Kazutaka Takahashi, Dept. of Organismal Biology and Anatomy, University of Chicago 9:20AM-10:00AM
"System Level Neuroengineering Modeling of the Nervous System-Part II"

Robert Haslinger, Department of Brain and Cognitive Sciences, MIT 10:00AM-10:40AM
"Analysis and Modeling of Local Field Potentials and Single-Unit Neuronal Activity"

COFFEE BREAK 10:40AM-10:50 AM

Riccardo Barbieri, Department of Anesthesia, Harvard University 10:50AM-11:20AM
"Point Process Encoding: Applications to Rat Hippocampal and Heartbeat Data"

Zhe Chen, Department of Brain and Cognitive Sciences, MIT 11:20AM-12:00AM
"Modeling Neuronal Multi-Unit Activity and Neural Dynamics"

LUNCH BREAK

DECODING FROM THE BRAIN

Uri Eden, Department of Mathematics and Statistics, Boston University 1:00PM-1:40PM
"Mathematical Algorithms for Neural Estimation"

Riccardo Barbieri, Department of Anesthesia, Harvard University 1:40PM-2:00PM
"Point Process Decoding: Application to Rat Hippocampal Data"

Bijoy Ghosh, Department of Mathematics and Statistics, Texas Tech University 2:00PM-2:40PM
"Encoding and Decoding with Turtle Visual Cortex Models Using GENESIS"

BRAIN MACHINE INTERFACES

Todd Coleman, Department of Electrical and Computer Engineering, UIUC 2:40PM-3:20PM
"Brain-Machine Interfaces: A Feedback-Information Theoretic Approach"

Nitish Thakor, Department of Biomedical Engineering, Johns Hopkins University “Neuroprosthesis: Decoding Dexterity: Spikes vs. LFP vs. ECoG”	3:20PM-4:00PM
COFFEE WITH DEMO Thakor students BMI Demonstration	4:00PM-4:30PM
Ming Cheng, Department of Clinical Neuroscience, Brown University “Parkinson’s Disease and Deep Brain Stimulation”	4:30PM-5:20PM
Jeff Moehlis, Department of Mechanical Engineering, UCSB “Single Neuron Control Based on Phase Response Curves”	5:20PM-6:00PM
Sridevi Sarma, Department of Brain and Cognitive Sciences, MIT “Closed-Loop Deep Brain Stimulation for Parkinson’s Disease”	TBD