2016 Dynamics and Control Annual Program Review

Dr. Frederick Leve | August 2-4, 2016 | Arlington, VA

Basic Research Innovation and Collaboration Center (BRICC)
4075 Wilson Blvd., Suite 350 | Liberty Room
Arlington, VA 22203

Agenda Day 1 – August 2, 2016

Time	Title	Speaker
07:00-08:00	**Registration**	
08:00-08:30	**INTRODUCTIONS**	Dr. Frederick Leve, AFOSR
08:30-09:00	Pursuit-evasion Games and Application	Dr. David Casbeer, AFRL/RQQ
09:00-09:30	Verifiable Human-Automation UAV Task Assignment and Scheduling Systems	Dr. Laura Humphrey, AFRL/RQQ
09:30-10:00	A Paradigm Shift in the Construction of Estimators and Controllers for Linear Dynamic Systems with Additive Cauchy Uncertainty	Dr. Jason Speyer, UCLA
10:00-10:30	Cooperation and Autonomy in Communication-Limited Environments	Dr. Naira Hovakimyan, UIUC
10:30-11:00	**BREAK**	
11:00-11:30	Preparation of Pure Gaussian States via Linear Quantum Systems with a Given Structure	Dr. Ian Petersen, UNSW and Dr. Matthew James, ANU
11:30-12:00	Temporal-logic-constrained Synthesis and Verification without Discretization	Drs. Ufuk Topcu, UT Austin
12:00-12:30	Computation-based Probabilistic Validation of Complex Cyber-controlled Systems	Dr. Geir Dullerud, UIUC
12:30-14:00	**LUNCH**	
14:00-14:30	Minimal Representation and Decision Making for Networked Autonomous Agents	Dr. Soon Jo Chung on behalf of Dr. Petros Voulgaris, UIUC
14:30-15:00	Multi-Agent Control	Dr. Alex Olshevsky, UIUC
15:00-15:30	Control & Estimation in the Presence of Adversarial Action and Uncertainty	Dr. Meir Pachter, AFIT
15:30-16:00	Virtual Service Topology-based Networked Control Techniques for Contested Cognit	Dr. Robert Murphey, AFRL/RW
16:00-16:15	Coverage-Based Human-Swarm Interactions	Dr. Magnus Egerstedt, GaTech
16:15-16:30	Pursuit-Evasion Games in Uncertain Environments	Dr. Panos Tsiotras, GaTech
	MEETING ADJOURNED FOR THE DAY	

Agenda Day 2 – August 3, 2016		
Time	**Title**	**Speaker**
07:00-08:00	**Registration**	
08:00-08:30	Hypersonic Vehicle Flight Control	Dr. Michael Bolender, AFRL/RQQ
08:30-09:00	Control, Filtering and System Identification for Directed Energy Systems	Dr. James Gibson, UCLA
09:00-09:30	Detection of a Moving Gas Source and Estimation of its Concentration Field with a Sensing Aerial Vehicle	Dr. Michael Demetriou and Dr. Nikolaos A. Gatsonis, WPI
09:30-10:00	Stochastic Dynamical Modeling: Structured Matrix Completion of Partially Available Statistics	Dr. Mihailo Jovanovic, UMN
10:00-10:30	**BREAK**	
10:30-11:00	Investigation of the Role of First Principles Physics, Control, and Optimization in Precision Air Drop	Dr. Dave Doman, AFRL/RQQ
11:00-11:30	Surviving the Data Deluge: A Combined Dynamical Systems/Machine Learning Approach	Dr. Mario Sznaier, Northeastern
11:30-12:00	Stochastic Surveillance via Markov Chain Modeling and Optimization	Dr. Francesco Bullo, UCSB
12:00-13:30	**LUNCH**	
13:30-14:00	Stochastic Hybrid Systems and Distributed Learning in Asynchronous Networks of Sampled-Data Systems	Dr. Andy Teel, UCSB
14:00-14:30	Stochastic Control, Networks, Fundamental Solutions and Computational Complexity	Drs. William Mceneaney, UCSD and George Yin, Wayne State
14:30-15:00	Explicit Solutions for Some Stochastic Differential Games	Drs. Tyrone Duncan and Bozenna Pasik-Duncan, KU
15:00-15:30	Estimation of Distributed Parameters in Permittivity Models of Composite Dielectric Materials Using Reflectance	Dr. Harvey Banks, NCSU
15:30-16:00	Optimal Mass Transport for Statistical Estimation, Image Analysis, Information Geometry and Control	Drs. Allen Tannenbaum, Stonybrook and Tryphon Georgiou, UMN
16:00-16:30	Synthesis of Reduced-Order Modeling, Global Sensitivity Analysis, and Uncertainty Quantification for Robust Control Design of Nonlinear Smart Composite Systems	Dr. Ralph Smith, NCSU
	MEETING ADJOURNED FOR THE DAY	

Agenda Day 3 – August 4, 2016		
Time	**Title**	**Speaker**
07:00-08:00	**Registration**	
08:00-08:30	Numerical Analysis of Distributed Optimal Control Problems Governed by Elliptic Variational Equalities or Inequalities with a Parameter	Dr. Domingo Tarzia, Depto. Matematica - CONICET
08:30-09:00	Mean Field Games and the Control of Large Scale Systems	Dr. Peter Caines, McGill
09:00-09:30	Compressive Feedback Control Design for Spatially Distributed Systems	Dr. Nader Motee, Lehigh
09:30-10:30	BRI-Theory-based Engineering of Biomolecular Circuits in Living Cells	Dr. Domitilla Del Vecchio, MIT
10:30-11:00	**BREAK**	
11:00-11:30	DSOS and SDSOS Techniques in Optimization and Control	Dr. Amir Ali Ahmadi, Princeton
11:30-12:00	Idempotent Methods for Worst-Case Analysis and Optimal Control	Dr. Peter Dower, Melbourne
12:00-12:30	Optimal Sensor Location in Distributed Parameter Systems	Dr. Kirsten Morris, Waterloo
12:30-14:00	**LUNCH**	
14:00-14:30	Analysis of Spatially Extended Dynamical Systems with Applications to Agent-Based Models	Drs. Igor Mezic, UCSB and Vladimir Fonoberov, AIMDYN
14:30-15:00	Fragility of Networked Systems	Dr. Munther Dahleh, MIT
15:00-15:30	State-dependent Dynamic Networks: Reachability, Regularity, and Quasi-Randomness	Dr. Mehran Mesbahi, UW
15:30-16:00	Optimal Realizable Networked Controllers for Networked Systems.	Dr. Nicola Elia, Iowa
16:00-16:30	Reconfigurable Algorithms for High Performance and Robust Autonomy in Complex Networks	Dr. Ricardo Sanfelice, UCSC
	MEETING ADJOURNED	