

## Control and Optimization with Differential-Algebraic Constraints - 24.-29.10.2010 Program

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### Monday - 25.10.2010

8:45	9:00	Opening remarks	
9:00	10:00	Barton	Global Optimization with Differential-Algebraic Constraints
10:00	10:30	Coffee break	
10:30	11:30	Asher	Dynamic regularization, level set shape optimization and computed myography
11:30	12:30	März	Regularity regions of DAEs and Linearizations
12:30	13:30	Lunch	
13:30	14:30	Kågstrom	Stratification of controllability and observability pairs – theory and use in applications
14:30	15:30	Ilchmann	Zero dynamics of linear DAEs
15:30	16:00	Coffee break	
16:00	17:00	Antoulas	Model reduction of linear differential-algebraic systems from measurements
17:00	18:00	Jay	On some numerical ODE techniques in nonlinear optimization

### Tuesday - 26.10.2010

9:00	10:00	Betts	Dabbling with Delays
10:00	10:30	Coffee break	
10:30	11:30	Borelli	Predictive Control of Energy Efficient Buildings
11:30	12:30	Kunkel	Necessary Conditions for the Optimal Control of Differential-Algebraic Equations with Arbitrary Index
12:30	13:30	Lunch	
13:30	14:30	Linh	Approximation of spectral intervals and associated leading directions for linear differential-algebraic systems via smooth singular value decompositions
14:30	15:30	Enright	Accurate and Reliable Software for Investigating Mathematical Models described by Systems of ODEs
15:30	16:00	Coffee break	
16:00	17:00	Swartz	Dynamic Optimization in the Process Industry – Applications and Challenges
17:00	18:00	Guay	Robust Adaptive Model Predictive Control of Constrained Nonlinear Systems

### Wednesday - 27.10.2010

9:00	10:00	Hager	Pseudospectral methods in optimal control	(Video)
10:00	10:30	Coffee break		
10:30	11:30	Benner	Numerical solution of descriptor Riccati equations for linearized Navier-Stokes control problems	(Video)
11:30	12:30	Kurina	Linear-quadratic problems with intermediate points and a small parameter	
12:30	13:30	Lunch		

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### Thursday - 28.10.2010

8:30	9:20	Varga	Descriptor system techniques in solving H2-optimal fault detection problems
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9:20	10:10	Losse	H-infinity control of descriptor systems
10:10	10:40	Coffee break	
10:40	11:30	Sager	Tba
11:30	12:30	Gugercin	Interpolatory model reduction for DAEs
12:30	13:30	Lunch	
13:30	14:20	Stykel	Model reduction of circuit equations
14:20	15:10	Daoutidis	High-index DAEs in modeling and control of process networks with tight integration
15:10	15:40	Coffee break	
15:40	16:30	Palanki	The application of PMP for end-point optimization
16:30	17:20	Gerdt	On a global minimum principle for DAE optimal control problems
17:20	18:00	Mengi	Generalized eigenvalue problems for nonsquare pencils

### Friday - 29.10.2010

8:30	9:20	Reis	Luré Equations and Singular Optimal Control
9:20	10:10	Scholz	Self-adjoint differential-algebraic and difference operators and their application
10:10	10:40	Coffee break	
10:40	11:30	Biegler	Dynamic real-time optimization using direct transcription and NLP sensitivity
11:30	12:30	Freund	Large-Scale Differential-Algebraic Equations Arising in VLSI Interconnect Analysis
12:30			Closing remarks