
WORKSHOP ON ALGORITHMS FOR DYNAMICAL SYSTEMS AND LYAPUNOV FUNCTIONS

17th–19th July 2013, Reykjavik University, Iceland

Program

Wednesday, 17th July 2013

9:15–10:00	Registration
10:00–10:15	Welcome
10:15–11:00	S. Hafstein: Computation of CPA Lyapunov functions
11:00–11:30	Coffee break
11:30–12:15	R. Baier: Computation of Lyapunov Functions for Differential Inclusions via Linear Programming
12:15–13:30	Lunch
13:30–14:15	A. Papachristodoulou: A sum of squares approach for constructing Lyapunov functions for Dynamical Systems
14:15–15:00	M. Peet: Computational Aspects of Intractable Control Problems
15:00–15:30	Coffee break
15:30–16:15	G. Valmorbida: Stability Analysis and Control Synthesis for polynomial systems
16:15–17:00	C. Kellett: Lyapunov Functions for Nonlinear Discrete-Time Systems
evening	<i>Dinner</i>

Thursday, 18th July 2013

9:30–10:15	F. Wirth: Lyapunov functions for interconnected systems
10:15–11:00	B. Rüffer: Nonlinear Perron-Frobenius Theory and Lyapunov functions for monotone systems
11:00–11:30	Coffee break
11:30–12:15	P. Giesl: Construction of Lyapunov functions and Contraction Metrics to determine the Basin of Attraction
12:15–13:30	Lunch
13:30–14:15	M. Lazar: On stability analysis of discrete-time homogeneous dynamics
14:15–15:00	H. Li: Computation of local ISS Lyapunov function via linear programming
15:00–15:30	Coffee break
15:30–16:00	A. Doban: Constrained stabilization via (k, λ) -contractive sets with an application to Buck converters
16:00–16:30	P. Stiefenhofer: The basin of attraction of periodic orbits in nonsmooth differential equations
16:30–17:00	N. Mohammed: Grid refinement in the construction of Lyapunov functions using radial basis functions
evening	<i>Dinner</i>

Friday, 19th July 2013

9:30–10:15	R. Sepulchre: Lyapunov functions on nonlinear spaces
10:15–11:00	F. Forni: A differential Lyapunov framework for contraction analysis
11:00–11:30	Coffee break
11:30–12:15	O. Junge: Dynamic programming using radial basis functions and Shepard approximations
12:15–13:30	Lunch
13:30–14:15	C. Pötzsche: Nonautonomous Dynamics at work: Analytical and numerical analysis of a population-dynamical model
14:15–15:00	M. Rasmussen: Approximation of nonautonomous invariant manifolds
15:00–15:30	Coffee break
15:30–16:15	N. Athanasopoulos: Geometric Construction of Polytopic Invariant and Controlled Invariant Sets for Linear Dynamical Systems
16:15–17:00	P. Kloeden: Construction of a Lyapunov function for pullback attractors of nonautonomous differential equations
17:00–17:10	Closing
afternoon	<i>Swimming Pool, including hot tubs and steam bath.</i>
evening	<i>Dinner</i>

Saturday, 20th July 2013

14:00–22:00	Golden Circle tour: (registration necessary, 5000 ikr. or 35 Euro per person). Dinner at Gullfoss (not included). The restaurant offers an excellent icelandic meat soup (lamb), salads, and sandwiches. <i>Our guide recommended this schedule because of much less traffic in the afternoon</i>
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