Aivar Sootla

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RESEARCH INTERESTS	**Decentralized modeling and control,** structure representation, fixed-order decentralized control, order reduction of systems with a structured. **Model order reduction,** frequency domain identification of linear systems, linear time-invariant model reduction, parameterized model reduction, linear parameter-varying system modeling, positive model reduction. **Optimization,** optimization in Hardy spaces, semidefinite relaxations, sequential semidefinite programming, sum-of-squares programming.
EDUCATION	**Lomonosov Moscow State University, Russia** Faculty of Computational Mathematics and Cybernetics, Department of Systems Analysis MSc equivalent in applied mathematics (Jun. 2006) Thesis topic: "On the Problem of Control Synthesis under Limited Information" Supervisor: Professor Alexander Kurzhanskii Graduated with diploma with honours (more than 75 % of excellent grades) **Lund University, Sweden** Faculty of Engineering, Department of Automatic Control PhD in Control Engineering (expected in Jan. 2012) Thesis topic: "Model Reduction in the Frequency Domain using the Semidefinite Programming" Supervisor: Professor Anders Rantzer
TEACHING EXPERIENCE	**Undergraduate level, "Automatic Control, Basic Course"** Lab assistant 2007-2008 Lab assistant, exercise session assistant, responsible for the examination 2008-2011 **Graduate (master student) level, "Multivariable Control"** Lab assistant, exercise session assistant, responsible for the examination 2009-2011
REFEREED PUBLICATIONS	"Nu-gap Model Reduction in the Frequency Domain" *in preparation* "Parameterized Model Reduction Based on Semidefinite Programming" with Kin Cheong Sou and Anders Rantzer *in preparation* "Hankel-type Model Reduction Based on Frequency Response Matching" *under review in IEEE Transactions on Automatic Control, 2011* "Model Reduction of Spatially Distributed Systems Using Coprime Factors and Semidefinite Programming" with Anders Rantzer *In Preprints of the 18th IFAC World Congress, Aug. 2011.* "Nu-gap Model Reduction in the Frequency Domain" *In Proc. American Control Conference, San Fransisco, CA, June 2011* "Hankel-type Model Reduction Based on Frequency Response Matching" *In Proc. 49th IEEE Conference on Decision and Control, Atlanta, GA, Dec. 2010.* "Frequency Domain Model Reduction Method for Parameter-Dependent Systems" with Kin Cheong Sou. *In Proc. American Control Conference, Baltimore, MD, USA, July 2010*

- "Multivariable Optimization-Based Model Reduction" with Georgios Kotsalis and Anders Rantzer. *IEEE Transactions on Automatic Control, 54:10, pp. 2477-2480, Oct. 2009*

- "Extensions to an Optimization-Based Multivariable Reduction Method" Anders Rantzer. *In Proceedings of the European Control Conference, Budapest, Hungary, Aug. 2009*

INVITED TALKS AND NON-REFEREED PUBLICATIONS

- "Comprehension-Oriented Examination - Problems and Possible Solutions" ("Förståelseinriktad Examination Problem och Möjliga Lösningar") with Björn Johnsson, Anna Lindholm, Anna-Lena Sahlberg and Anders Widd *3:e Utvecklingskonferensen för Sveriges ingenjörsutbildningar, Norrköping, Nov. 2011* . In Swedish

- "Hankel-type Model Reduction Based on Frequency Response Matching" *Workshop on Model Reduction for Complex Dynamical Systems, 2-4 Dec. 2010*

- "Properties of a Parameterized Model Reduction Method" *In Proc. 19th International Symposium on Mathematical Theory of Networks and Systems, Budapest, Hungary, July 2010*

- "Hankel-type Model Reduction Based on Frequency Response Matching" *Swedish Control Meeting, 2010, Lund*

- "Parameter Dependent Model Reduction Framework with Applications" with Anders Rantzer *Swedish Control Meeting, 2010, Lund*

- "Multivariable Optimization-Based Model Reduction" *Swedish Control Meeting, 2008, Luleå*

- "On the Problem of Control Synthesis under Limited Information" 24 Feb. 2006 Lund University

RELEVANT COURSES

Graduate level (Masters level): Real-Time Systems, Functional Analysis, Hardy Spaces, Compiler Construction, Riemannian Geometry.

PhD level: Convex Optimization, Robust Control, Stochastic Control, Linear Systems. Non-Linear Control, Optimization-Based Methods and Tools in Control, Structure and Interpretation of Computer Programs, Functional Analysis in Systems Theory.

4th HYCON2 PhD School on Control of Networked and Large-Scaled Systems, June 21-24 2011, University of Trento, Trento.

COMPUTER SKILLS Programming languages: C/C++, Java, Matlab/Simulink

LANGUAGE SKILLS

Estonian, Russian	native languages
English, Swedish	fluent
French	decent writing and speaking skills
Kazakh,Finish	basic knowledge