

Control of Uncertain Systems: Modelling, Approximation, and Design

A workshop on the occasion of Keith Glover's 60th birthday

PROGRAMME

Thursday 20 April 2006

19:00 – 22:00 Reception

Old Library, Pembroke College

Friday 21 April 2006

Lectures will be held in the Fisher Building, St. John's College.

8:15 Registration desk open. Coffee

8:55 Welcome

Vice-Chancellor Alison Richard

Chair: **David Mayne** (Imperial College)

9:00 **Brian Anderson**
(Australian National University)

LMI-Based Gain Scheduling Control Design for a Class of Linear Parameter Varying Systems

9:30 **Pablo Iglesias**
(The Johns Hopkins University)

Feedback Regulation of Cell Shape During Cytokinesis

10:00 **Geir Dullerud**
(University of Illinois)

Model Reduction of Strongly Stable Nonstationary LPV Systems

break

Chair: **Anders Rantzer** (Lund Institute of Technology)

11:00 **Roger Brockett**
(Harvard University)

Using Time-Varying Feedback to Improve System Identification

11:30 **Harry Dym**
(The Weizmann Institute)

Riccati Inequalities and Reproducing Kernel Hilbert Spaces

12:00 **Hidenori Kimura**
(RIKEN)

Long-Run Behaviours of Genetic Toggle Switch

lunch

Chair: **Jonathan Partington** (University of Leeds)

14:00 **Ruth Curtain**
(University of Groningen)

Robust Stabilization with Respect to Coprime Factor Perturbations Revisited

14:30 **Michael Cantoni**
(University of Melbourne)

On the Gap Metric for Finite-dimensional Linear Time-varying Systems in Continuous Time

15:00 **Michel Gevers**
(Université Catholique de Louvain)

Experiment Design for Robust Control: Why Do More Work Than Is Needed

break

Chair: **Pramod Khargonekar** (University of Florida)

16:00 **Rick Hyde**
(University of Bristol)

Review of Multivariable Control Applied to the VAAC Harrier and Remaining Open Questions

16:30 **Glenn Vinnicombe**
(University of Cambridge)

Fundamental Limitations in Gene Regulation

17:00 **Jan Willems**
(Katholieke Universiteit Leuven)

State Construction from Measured Data

19:00 Pre-dinner drinks

Gonville and Caius College

19:30 Banquet

Saturday 22 April 2006

8:30 Coffee

Chair: **Ian Postlethwaite** (University of Leicester)

9:00 M. Vidyasagar *Stochastic Modelling Over a Finite Alphabet and Algorithms for Finding Genes from Genomes*
(Tata Consultancy Services)

9:30 Lino Guzzella *Past, Present and Future of Automotive Control*
(Swiss Federal Institute of Technology)

10:00 Andy Packard *Collaborative Science: Give Me Your Information, Not Your Conclusions*
(University of California, Berkeley)

break

Chair: **Manfred Morari** (Swiss Federal Institute of Technology)

11:00 Karl Astrom *Qualitative Assessment of Achievable Performance in Loop Shaping Design*
(Lund Institute of Technology)

11:30 Nick Collings *IC Engine Control - Enduring Challenges*
(University of Cambridge)

12:00 John Doyle *Robustness and Complexity*
(California Institute of Technology)

lunch

Chair: **Richard Vinter** (Imperial College)

14:00 Sanjay Lall *Optimal Control Subject to Decentralization Constraints*
(Stanford University)

14:30 David Limebeer *An H^∞ Loop-Shaping Approach to Steering Control for High-Performance Motorcycles*
(Imperial College)

15:00 George Papageorgiou *Distance Measures, Robust Stability Conditions, and Robust Performance Guarantees for Uncertain Systems*
(Honeywell Laboratories)

break

Chair: **Tryphon Georgiou** (University of Minnesota)

16:00 Gary Balas *Control of High-Speed Underwater Vehicles*
(University of Minnesota)

16:30 Bruce Francis *Getting Mobile Autonomous Robots to Rendezvous*
(University of Toronto)

17:00-18:00 Reception