



# CTS-HYCON Workshop on Nonlinear and Hybrid Control

10-12 July 2006, Université Paris Sorbonne (Paris IV), 17 rue de la Sorbonne, Paris

Welcome reception / Registration : 9 July 2006 from 18:30, 17 rue de la Sorbonne, Paris			
	Monday 10 July	Tuesday 11 July	Wednesday 12 July
8:25 - 9:10	Registration from 8:00 / Opening at 9:00	<i>Claire Tomlin</i>	<i>Georges Bastin</i>
9:10 - 9:55	<i>Rodolphe Sepulchre</i>	<i>Karl Henrik Johansson</i>	<i>Eduardo Camacho</i>
9:55 - 10:35	SESSION 1.1	SESSION 2.1	SESSION 3.1
10:35 - 10:55	pause	pause	pause
10:55 - 12:15	SESSION 1.2	SESSION 2.2	SESSION 3.2
12:15 - 13:00	<i>Bronislaw Jakubczyk</i>	<i>Arjan van der Schaft</i>	<i>Alexandre M. Bayen</i>
13:00 - 14:15	Lunch	Lunch	Lunch
14:15 - 15:00	<i>Frank Allgower &amp; Christian Ebenbauer</i>	<i>Andrew Teel</i>	<i>Gauthier Sallet</i>
15:00 - 16:20	SESSION 1.3	SESSION 2.3	SESSION 3.3
16:20 - 16:45	pause	pause	pause
16:45 - 17:45	SESSION 1.4	SESSION 2.4	SESSION 3.4
17:45 - 18:30	<i>Henk Nijmeijer</i>	<i>John Lygeros</i>	<i>Antonio Bicchi</i>
18:30 - 19:15	<i>John Baras</i>	<i>Shankar Sastry</i>	Bus departure for a Paris Guided Tour and la Ferme du Manet
	Invited Speakers & IPC dinner		Dinner and award ceremony



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*Shankar Sastry*

*Arjan van der Schaft*

*Rodolphe Sepulchre*

*Andrew Teel*

*Claire Tomlin*

Polynomial control systems : analysis and design via dissipation inequalities

Modelling and synthesis of networked systems

Modelling and boundary control of networks of conservation laws

Hybrid control of distributed parameter systems

Symbolic control of dynamic systems: from control quanta to control encoding

Model predictive control for hybrid systems

Phase portraits and feedback invariants of control systems

Control over wireless networks

Stochastic hybrid models in air traffic and biochemical processes

Synchronisation and coordination in mechanical systems

Introduction to control problems in epidemiology and immunology

Estimation of hybrid models

Network modeling and control of physical systems

Coordinated control and collective optimization

Robust stability for hybrid dynamical systems

Controller synthesis for hybrid systems: air traffic and flight management

**Amphitheater RICHELIEU**

**Amphitheater GUIZOT**



Programme of the SESSION at the back .....

Monday 10 July 2006	<b>SESSION 1.1</b>
	Iteratively improving moving horizon observers for repetitive processes, <i>Ignacio Alvarado, Rolf Findeisen, Peter Kühf, Frank Allgöwer, Daniel Limón</i>
	Navier-Stokes equation on a plane bounded domain: continuity properties for controllability, <i>Sergio Rodrigues</i>
	<b>SESSION 1.2</b>
	A rigorous numerical algorithm for controllability, <i>Fritz Colonius, Tomasz Kapela</i>
	Exponential stability of dynamic systems on time scales, <i>Ewa Piotrowska</i>
	Further remarks on stability crossing curves, <i>Irinel Constantin Morarescu, Silviu Iulian Niculescu</i>
	About stability analysis for discrete time systems with time varying delays, <i>Laurentiu Hetel, Jamal Daafouz, Claude Iung</i>
	<b>SESSION 1.3</b>
	Achieving stability in non-holonomic systems by means of switching control laws, <i>Daniele Casagrande, Alessandro Astolfi, Thomas Parisini</i>
	Output tracking for output delay systems using the system centre approach and sliding mode control, <i>Gang Liu, Alan S. I. Zinober, Yuri B. Shtessel</i>
	Fast tracking of Poiseuille trajectories in Navier Stokes 2D channel flow, <i>Rafael Vazquez, Emmanuel Trelat, Jean-Michel Coron</i>
	Nonsmooth optimization for the sphere packing problem on Grassmannians, <i>Christian Lageman, Uwe Helmke</i>
	<b>SESSION 1.4</b>
A new adaptive control algorithm for systems with multilinear parametrization : n-parameters case, <i>Mariana Netto, Anuradha Annaswamy, Said Mammar, Nicoleta Minoiu</i>	
Tools for semiglobal practical stability analysis of cascaded systems and applications, <i>Antoine Chaillet</i>	
Total energy shaping control of mechanical systems: simplifying the matching equations via coordinate changes, <i>Giuseppe Viola, Romeo Ortega, Ravi Banavar, Jose Angel Acosta, Alessandro Astolfi</i>	
Tuesday 11 July 2006	<b>SESSION 2.1</b>
	Judjevic-Quinn conditions and discontinuous bounded controls, <i>Alex Bombrun, Jean-Baptiste Pomet</i>
	A contribution to the study of periodic systems in the behavioral approach, <i>Jose Aleixo, Jan Polderman, Paula Rocha</i>
	<b>SESSION 2.2</b>
	Feedback classification and bifurcations of $\sim 1$ -parameter families of control-affine systems, <i>Marek Rupniewski, Witold Respondek</i>
	State-linearization of positive nonlinear systems, <i>Wiktor Malesza, Witold Respondek</i>
	Iterative Nonlinear Model Predictive Controller: a review, <i>José Ramos Cueli</i>
	Hybrid Model Predictive Control applied on sewer network: Barcelona case study, <i>Carlos Ocampo-Martinez, Ari Ingimundarson, Vicenç Puig, Joseba Quevedo</i>
	<b>SESSION 2.3</b>
	Observability of hybrid automata by abstraction, <i>Alessandro D'Innocenzo, Maria Domenica Di Benedetto, Stefano Di Gennaro</i>
	The on-line diagnosis of time Petri nets based on partial orders, <i>George Jiroveanu, Bart De Schutter, Rene K. Boel</i>
	Parameters identification of hybrid switching systems, <i>Laurent Burlion, Tarek Ahmed-Ali, Françoise Lamnabhi-Lagarrigue</i>
	Realization theory of nonlinear hybrid systems, <i>Mihaly Petreczky, Jean-Baptiste Pomet</i>
	<b>SESSION 2.4</b>
Ellipsoidal output-feedback sets for $H_{\infty}$ control of a class of stochastic hybrid systems with state-dependant noise, <i>Samir Aberkane, Jean Christophe Ponsart, Dominique Sauter</i>	
Stabilizability based state space reductions for hybrid systems, <i>Elena De Santis, Maria Domenica Di Benedetto, Giordano Pola</i>	
Stability of equilibria for hybrid models of genetic regulatory networks, <i>Richard Casey, Hidde de Jong, Jean-Luc Gouze</i>	
Wednesday 12 July 2006	<b>SESSION 3.1</b>
	Sliding mode controllers and observers for the control of DC-to-DC nonlinear power converter, <i>Enric Fossas Colet, Josep M. Olm, Luis-Miguel Sanz Manzanedo, Alan S. I. Zinober</i>
	Energy Transfer via Point Interaction Control, <i>Andrea Mantile</i>
	<b>SESSION 3.2</b>
	Feedback stabilization of an optimally scheduled operation of an hybrid chemical plant, <i>Iliyana Simeonova, François Warichet, Georges Bastin, Denis Dochain, Yves Pochet</i>
	Robust identification in nonlinear dynamic process models, <i>Maria Rodriguez-Fernandez, Antonio A. Alonso, Julio R. Banga</i>
	Dynamic optimization of nonlinear bioreactors, <i>Maria Sonia Garcia Garcia, Eva Balsa-Canto, Antonio Álvarez Alonso, Julio Rodriguez Banga</i>
	On estimation problems of a 5 stage anaerobic digestion process, <i>Elena Chorukova, Sette Diop, Ivan Simeonov</i>
	Adaptive relaxed sliding mode observer chaotic communication scheme with intentionally injected uncertainties, <i>Reza Raoufi, Alan Zinober</i>
	<b>SESSION 3.3</b>
	Smooth approximations of single-input controlled Keplerian trajectories : homotopies and averaging, <i>Bernard Bonnard, Jean-Baptiste Caillaud, Romain Dujol</i>
	A novel power-based modeling framework for a class of mechanical systems, <i>Alessandro de Rinaldis</i>
	New convenient formula for impedance change calculation in non-destructive testing problems by control of eddy currents, <i>Ilona Dzenite, Maximilian Antimirov</i>
	On boundary conditions for a problem on MHD flow in the initial part of a channel, solved in Oseen approximation, <i>Elena Ligere, Maximilian Antimirov</i>
<b>SESSION 3.4</b>	
A formation control algorithm using Voronoi regions, <i>Magnus Lindhé, Karl Henrik Johansson</i>	
Transient stabilization and voltage regulation of a synchronous generator, <i>Gilney Damm, Françoise Lamnabhi-Lagarrigue, Riccardo Marino, Cristiano Maria Verrelli</i>	
Hybrid predictive control of a simulated chemical plant, <i>Miguel Rodriguez, Daniel Sarabia, Cesar de Prada</i>	