

Plenary 1

P01

Venue: Diamond

Chair: Ian Craig

2007/08/21

**THE PEBBLE BED MODULAR REACTOR AND THE USAGE OF SYSTEMS
ENGINEERING TO ESTABLISH NEW STANDARDS FOR THE NUCLEAR REVIVAL**

16:50 to 17:50

Willie Theron (PBMR Pty Ltd, South Africa)

Dieter Matzner (PBMR Pty Ltd, South Africa)

Louwrence Erasmus (PBMR Pty Ltd, South Africa)

Plenary 2

P02

Venue: Diamond

Chair: Alberto Isidori

2007/08/22

A UNIFYING POINT OF VIEW ON OUTPUT FEEDBACK DESIGNS

09:00 to 10:00

Vincent Andrieu (Imperial College, United Kingdom)

Laurent Praly (Ecole des Mines de Paris, France)

Semi-Plenary 1

SP01

Venue: Diamond

Chair: Baozhu Guo

2007/08/22

NONLINEAR CONTROL OF PDES: ARE FEEDBACK LINEARIZATION AND GEOMETRIC METHODS APPLICABLE?

10:10 to 11:40

Miroslav Krstic (University of California, San Diego, United States)

Rafael Vazquez (Universidad de Sevilla, Spain)

Semi-Plenary 2

SP02

Venue: Ruby

Chair: David Angeli

2007/08/22

CONTROL BY (STATE-MODULATED) INTERCONNECTION OF PORT-HAMILTONIAN SYSTEMS

10:10 to 11:40

Romeo Ortega (LSS Supelec, France)

Arjan van der Schaft (University of Groningen, The Netherlands)

Fernando Castanos (LSS Supelec, France)

Alessandro Astolfi (Imperial College, United Kingdom)

Advances in theoretical foundations of NMPC

ATF-NMPC

S01

Invited Session

Organized by Mircea Lazar, Eindhoven University of Technology, The Netherlands; Daniel Limon, Universidad de Sevilla, Spain; Davide Raimondo, Università di Pavia, Italy

Venue: Diamond

Chair: Mircea Lazar / Co-chair: Davide Raimondo

2007/08/22

TUBE-BASED ROBUST NONLINEAR MODEL PREDICTIVE CONTROL

11:10 to 11:30

David Q. Mayne (Imperial College London, United Kingdom)
Eric C. Kerrigan (Imperial College London, United Kingdom)

2007/08/22

REGIONAL INPUT-TO-STATE STABILITY OF MIN-MAX MODEL PREDICTIVE CONTROL

11:30 to 11:50

Davide Martino Raimondo (Università degli Studi di Pavia, Italy)
Daniel Limon (Universidad de Sevilla, Spain)
Mircea Lazar (Eindhoven University of Technology, The Netherlands)
Lalo Magni (Università degli Studi di Pavia, Italy)
Eduardo Fernandez Camacho (Universidad de Sevilla, Spain)

2007/08/22

MODEL PREDICTIVE CONTROL OF CONTINUOUS TIME NONLINEAR DIFFERENTIAL ALGEBRAIC SYSTEMS

11:50 to 12:10

Johan Sjöberg (Linköpings University, Sweden)
Rolf Findeisen (University of Stuttgart, Germany)
Frank Allgöwer (University of Stuttgart, Germany)

2007/08/22

A DECENTRALIZED MPC ALGORITHM FOR NONLINEAR SYSTEMS

12:10 to 12:30

Davide Martino Raimondo (Università di Pavia, Italy)
Lalo Magni (Università di Pavia, Italy)
Riccardo Scattolini (Politecnico di Milano, Italy)

2007/08/22

MODEL PREDICTIVE CONTROL FOR NONLINEAR TIME-DELAY SYSTEMS

12:30 to 12:50

Tobias Raff (Institute for Systems Theory and Automatic Control, Germany)
Carsten Angrick (Institute for Systems Theory and Automatic Control, Germany)
Rolf Findeisen (Institute for Systems Theory and Automatic Control, Germany)
Jung-Su Kim (Institute for Systems Theory and Automatic Control, Germany)
Frank Allgöwer (Institute for Systems Theory and Automatic Control, Germany)

New complex systems

NCS

S05

Regular Session

Venue: Ruby

Chair: Filip De Smet / Co-chair: Georgi Marko Dimirovski

2007/08/22

11:10 to 11:30

QUANTITATIVE CONVERGENCE ANALYSIS OF MULTI-AGENT SYSTEMS

S. Emre Tuna (University of Liege, Belgium)

Rodolphe Sepulchre (University of Liege, Belgium)

2007/08/22

11:30 to 11:50

ENTROPY OF CURVES FOR NONLINEAR SYSTEMS CLASSIFICATION

Aldo Balestrino (University of Pisa, Italy)

Andrea Caiti (University of Pisa, Italy)

Emanuele Crisotomi (University of Pisa, Italy)

2007/08/22

11:50 to 12:10

SWITCHED UNCERTAIN LINEAR SYSTEMS CONTROL BY ROBUST HINF SMC SYNTHESIS

Jie Lian (Noretheastern University of Shenyang, China)

Georgi Marko Dimirovski (Dogus University of Istanbul, Turkey)

Jun Zhao (Australian National University of Canberra, Australia)

2007/08/22

12:10 to 12:30

DATA BASED QUANTIFICATION OF SYSTEM NONLINEARITY

Shoukat Choudhury (Bangladesh University of Engineering and Technology, Bangladesh)

Sirish Shah (University of Alberta, Canada)

2007/08/22

12:30 to 12:50

A MODEL FOR THE DYNAMICAL PROCESS OF CLUSTER FORMATION

Dirk Aeyels (Ghent University, Belgium)

Filip De Smet (Ghent University, Belgium)

Nonlinear mathematical systems theory

NMST

S10

Regular Session

Venue: Emerald

Chair: Dragan Netic / Co-chair: John Hauser

2007/08/22

11:10 to 11:30

REDUCED DYNAMIC INVERSION FOR PLANAR AND SPATIAL VEHICLES

Alessandro Saccon (Università di Padova, Italy)
John Hauser (University of Colorado, Boulder, United States)
Ruggero Frezza (Università di Padova, Italy)

2007/08/22

11:30 to 11:50

THE DRIVEN ROLLING TORUS

John Hauser (University of Colorado, Boulder, United States)
Alessandro Saccon (Univeristy of Padova, Italy)

2007/08/22

11:50 to 12:10

HOMOGENEOUS EIGENVALUE ANALYSIS FOR COMPLEX HOMOGENEOUS SYSTEMS

Nami Nakamura (Nara Institute of Science and Technology, Japan)
Hisakazu Nakamura (Nara Institute of Science and Technology, Japan)
Yuh Yamashita (Hokkaido University, Japan)
Hirokazu Nishitani (Nara Institute of Science and Technology, Japan)

2007/08/22

12:10 to 12:30

A TRAJECTORY BASED APPROACH FOR ROBUST STABILITY PROPERTIES OF INFINITE-DIMENSIONAL SYSTEMS

Ying Tan (The University of Melbourne, Australia)
Dragan Netic (The University of Melbourne, Australia)
Andrew Teel (University of California, Santa Barbara, United States)

2007/08/22

12:30 to 12:50

COMPUTING THE SETTLING TIME FOR NONLINEAR STEP RESPONSES

Torkel Glad (Linkoping University, Sweden)

2007/08/22

12:50 to 13:10

ENSEMBLE CONTROL ON LIE GROUPS

Jr-Shin Li (Washington University, United States)
Navin Khaneja (Harvard University, United States)

Boundary control of nonlinear PDEs I

PDE-I

S15

Invited Session

Organized by Miroslav Krstic, University of California, San Diego, USA; Baozhu Guo, University of the Witwatersrand, South Africa

Venue: Amethyst

Chair: Miroslav Krstic / Co-chair: Baozhu Guo

2007/08/22

ON UNIFORM STABILIZATION OF A SEMILINEAR WAVE EQUATION WITH VARIABLE COEFFICIENTS UNDER THE NONLINEAR BOUNDARY FEEDBACK

11:10 to 11:30

Zhi-Chao Shao (University of the Witwatersrand, South Africa)
Bao-Zhu Guo (University of the Witwatersrand, South Africa)

2007/08/22

ON THE BOUNDARY CONTROL OF KIRCHHOFF'S NONLINEAR STRING

11:30 to 11:50

Omer Morgul (Bilkent University, Turkey)
Shahram Shahruz (Berkeley Engineering Research Institute, United States)

2007/08/22

TRACKING CONTROL FOR A DIFFUSION-CONVECTION-REACTION SYSTEM: COMBINING FLATNESS AND BACKSTEPPING

11:50 to 12:10

Thomas Meurer (Vienna University of Technology, Austria)
Andreas Kugi (Vienna University of Technology, Austria)

2007/08/22

BOUNDARY CONTROL LAWS FOR PARABOLIC PDES WITH VOLTERRA NONLINEARITIES---PART I: DESIGN

12:10 to 12:30

Rafael Vazquez (Universidad de Sevilla, Spain)
Miroslav Krstic (University of California, San Diego, United States)

2007/08/22

BOUNDARY CONTROL LAWS FOR PARABOLIC PDES WITH VOLTERRA NONLINEARITIES---PART III: ANALYSIS

12:30 to 12:50

Rafael Vazquez (Universidad de Sevilla, Spain)
Miroslav Krstic (University of California, San Diego, United States)

Nonlinear modeling and identification

NMI

S19

Regular Session

Venue: Garnet

Chair: Torkel Glad / Co-chair: Byung-Eul Jun

2007/08/22

11:10 to 11:30

PORT-BASED FINITE ELEMENT MODEL OF A FLEXIBLE LINK

Alessandro Macchelli (University of Bologna, Italy)
Stefano Stramigioli (University of Twente, The Netherlands)
Claudio Melchiorri (University of Bologna, Italy)

2007/08/22

11:30 to 11:50

AN IDENTIFIABLE CONTROL ORIENTED DYNAMIC FRICTION MODEL

Luis Alvarez-Icaza (Universidad Nacional Autónoma de México, Mexico)
René Jiménez (Universidad Nacional Autónoma de México, Mexico)

2007/08/22

11:50 to 12:10

USING MANIFOLD LEARNING FOR NONLINEAR SYSTEM IDENTIFICATION

Henrik Ohlsson (Linköping University, Sweden)
Jacob Roll (Linköping University, Sweden)
Lennart Ljung (Linköping University, Sweden)
Torkel Glad (Linköping University, Sweden)

2007/08/22

12:10 to 12:30

MODEL REDUCTION OF NONLINEAR DIFFERENTIAL-ALGEBRAIC EQUATIONS

Johan Sjöberg (Linköping University, Sweden)
Torkel Glad (Linköping University, Sweden)
Kenji Fujimoto (Nagoya University, Japan)

2007/08/22

12:30 to 12:50

IDENTIFICATION OF THE INERTIA MATRIX OF A ROTATING BODY BASED ON ERRORS-IN-VARIABLES MODELS

Byung-Eul Jun (Agency for Defense Development, Republic of Korea)
Dennis Bernstein (University of Michigan, Ann Arbor, United States)
Harris McClamroch (University of Michigan, Ann Arbor, United States)

2007/08/22

12:50 to 13:10

APPROXIMATION OF FAST SPECIES IN KINETIC NETWORKS USING NON-NEGATIVE POLYNOMIALS

Klaas Martijn Nauta (Technische Universiteit Eindhoven, The Netherlands)
Siep Weiland (Technische Universiteit Eindhoven, The Netherlands)
Ton Backx (Technische Universiteit Eindhoven, The Netherlands)

Semi-Plenary 3

SP03

Venue: Diamond

Chair: Martin Guay

2007/08/22

CONTROLLABILITY OF SWITCHED SYSTEMS

14:10 to 14:40

Daizhan Cheng (Institute of Systems Science, China)

Semi-Plenary 4

SP04

Venue: Ruby

Chair: Brian Wigdorowitz

2007/08/22

NONLINEAR OUTPUT REGULATION AND CROSS-TERMS COMPENSATION

14:10 to 14:40

Lorenzo Marconi (University of Bologna, Italy)

Advances in computational techniques of NMPC

ACT-NMPC

S02

Invited Session

Organized by Mircea Lazar, Eindhoven University of Technology, The Netherlands; Daniel Limon, Universidad de Sevilla, Spain; Davide Raimondo, Universita di Pavia, Italy

Venue: Diamond

Chair: Mircea Lazar / Co-chair: Davide Raimondo

2007/08/22

A PRACTICAL APPROACH TO PREDICTIVE CONTROL FOR NONLINEAR PROCESSES

14:50 to 15:10

Agustinho Plucenio (Federal University of Santa Catarina, Brazil)
Daniel Pagano (Federal University of Santa Catarina, Brazil)
Augusto Bruciapaglia (Federal University of Santa Catarina, Brazil)
Julio E. Normey-Rico (Federal University of Santa Catarina, Brazil)

2007/08/22

A STABILIZING NONLINEAR PREDICTIVE CONTROL STRATEGY

15:10 to 15:30

Smaranda Cristea (University of Valladolid, Spain)
Cesar de Prada (University of Valladolid, Spain)

2007/08/22

INPUT TO STATE STABILISING NONLINEAR MODEL PREDICTIVE CONTROL BASED ON QP

15:30 to 15:50

Jose Mare (The University of Newcastle, Australia)
Mircea Lazar (Eindhoven University of Technology, The Netherlands)
Jose De Dona (The University of Newcastle, Australia)

2007/08/22

ADAPTIVE ROBUST MPC: AN EYE TOWARDS COMPUTATIONAL SIMPLICITY

15:50 to 16:10

Darryl Dehaan (Praxair Research Centre, Canada)
Veronica Adetola (Queen's University, Canada)
Martin Guay (Queen's University, Canada)

2007/08/22

AN ONLINE ACTIVE SET STRATEGY FOR FAST ADJOINT BASED NONLINEAR MODEL PREDICTIVE CONTROL

16:10 to 16:30

Leonard Wirsching (University of Heidelberg, Germany)
Hans Joachim Ferreau (K.U. Leuven, Belgium)
Hans Georg Bock (University of Heidelberg, Germany)
Moritz Diehl (K.U. Leuven, Belgium)

Nonlinear system complexity and networking

NSCN

S06

Regular Session

Venue: Ruby

Chair: Sergej Celikovsky / Co-chair: Jean-Pierre Barbot

2007/08/22

14:50 to 15:10

GRAZING ANALYSIS FOR SYNCHRONIZATION OF CHAOTIC HYBRID SYSTEM

Djamila Benmerzouk (Tlemcen University, France)

Jean-Pierre Barbot (Tlemcen University, France)

2007/08/22

15:10 to 15:30

PERFORMANCE CONTROL OF AGGREGATE QOS NETWORKING PROCESSES

Alexandru Murgu (British Telecom, United Kingdom)

2007/08/22

15:30 to 15:50

A NON-EQUILIBRIUM ANALYSIS AND CONTROL FRAMEWORK FOR COMMUNICATION NETWORKS

Tansu Alpcan (Deutsche Telekom Laboratories, Germany)

Paul Wang (University of Illinois at Urbana-Champaign, United States)

Prashant G. Mehta (University of Illinois at Urbana-Champaign, United States)

Tamer Basar (University of Illinois at Urbana-Champaign, United States)

2007/08/22

15:50 to 16:10

A LYAPUNOV ISS SMALL-GAIN THEOREM FOR STRONGLY CONNECTED NETWORKS

Sergej N. Dashkovskiy (Universität Bremen, Germany)

Björn S. Rüffer (Universität Bremen, Germany)

Fabian R. Wirth (Universität Bremen, Germany)

2007/08/22

16:10 to 16:30

ROBUST STRUCTURAL SYNCHRONIZATION IN DYNAMICAL COMPLEX NETWORKS

Sergej Celikovsky (Academy of Sciences of the Czech Republic, Czech Republic)

Volodymyr Lynnyk (Czech Technical University, Czech Republic)

Guanrong Chen (City University of Hong Kong, China)

Mathematical analysis of nonlinear systems

MANS

S11

Regular Session

Venue: Emerald

Chair: Mitsuji Sampei / Co-chair: Jiangfeng Zhang

2007/08/22

IMPROVING CONVERGENCE OF PERTURBATION-BASED EXTREMUM SEEKING METHODS FOR A CLASS OF DIFFERENTIALLY FLAT SYSTEMS

14:50 to 15:10

Moncef Chioua (Ecole Polytechnique de Montreal, Canada)
Bala Srinivasan (Ecole Polytechnique de Montreal, Canada)
Michel Perrier (Ecole Polytechnique de Montreal, Canada)
Martin Guay (Queen's University, Canada)

2007/08/22

GROWTH RATE OF SWITCHED HOMOGENEOUS SYSTEM

15:10 to 15:30

S. Emre Tuna (University of Liege, Belgium)

2007/08/22

ABOUT THE OBSERVABILITY OF NONLINEAR SWITCHING SYSTEMS

15:30 to 15:50

Rudy Kajdan (Laboratoire de Vision et Robotique, France)
Didier Aubry (Laboratoire de Vision et Robotique, France)
Frédéric Kratz (Laboratoire de Vision et Robotique, France)

2007/08/22

A BASIC CONVERGENCE RESULT FOR PARTICLE FILTERING

15:50 to 16:10

Xiao-Li Hu (Chinese Academy of Sciences, China)
Thomas B. Schön (Linköpings Universitet, Sweden)
Lennart Ljung (Linköpings Universitet, Sweden)

2007/08/22

CLASSIFICATION AND CONTROL FOR DRIFTLESS SYSTEM IN VIEW OF PARAMETER ERROR IN COORDINATE TRANSFORMATION

16:10 to 16:30

Tadasuke Matsumoto (Tokyo Institute of Technology, Japan)
Shigeki Nakaura (Tokyo Institute of Technology, Japan)
Mitsuji Sampei (Tokyo Institute of Technology, Japan)

2007/08/22

CONSERVATION LAWS FOR INVARIANT FUNCTIONALS CONTAINING COMPOSITIONS

16:30 to 16:50

Gastao S. F. Frederico (University of Cabo Verde, Cape Verde)
Delfim F. M. Torres (University of Aveiro, Portugal)

Boundary control of nonlinear PDEs II

PDE-II

S16

Invited Session

Organized by Miroslav Krstic, University of California, San Diego, USA; Baozhu Guo, University of the Witwatersrand, South Africa

Venue: Amethyst

Chair: Miroslav Krstic / Co-chair: Baozhu Guo

2007/08/22

MOTION PLANNING FOR THE HEAT EQUATION WITH RADIATION BOUNDARY CONDITIONS BASED ON FINITE DIFFERENCE SEMI-DISCRETIZATIONS

14:50 to 15:10

Tilman Utz (Vienna University of Technology, Austria)
Thomas Meurer (Vienna University of Technology, Austria)
Andreas Kugi (Vienna University of Technology, Austria)

2007/08/22

BOUNDARY CONTROL OF SYSTEMS OF CONSERVATION LAWS: LYAPUNOV STABILITY WITH INTEGRAL

15:10 to 15:30

Valérie Dos Santos (Université de Lyon, France)
Georges Bastin (Université Catholique de Louvain - Belgique, Belgium)
Jean-Michel Coron (Université Paris-Sud, France)
Brigitte d'Andréa-Novel (Ecole des Mines de Paris, France)

2007/08/22

MODEL BASED PIPELINE MONITORING WITH LEAK DETECTION

15:30 to 15:50

Espen Hauge (Norwegian University of Science and Technology, Norway)
Ole Morten Aamo (Norwegian University of Science and Technology, Norway)
John-Morten Godhavn (Statoil, Norway)

2007/08/22

BACKSTEPPING BOUNDARY CONTROL OF MAGNETOHYDRODYNAMIC CHANNEL FLOW

15:50 to 16:10

Rafael Vazquez (Universidad de Sevilla, Spain)
Eugenio Schuster (Lehigh University, United States)
Miroslav Krstic (University of California, San Diego, United States)

2007/08/22

BOUNDARY CONTROL LAWS FOR PARABOLIC PDES WITH VOLTERRA NONLINEARITIES---PART II: EXAMPLES

16:10 to 16:30

Rafael Vazquez (Universidad de Sevilla, Spain)
Miroslav Krstic (University of California, San Diego, United States)

Model based feedback design and applications

MBFDA

S20

Regular Session

Venue: Garnet

Chair: Giuseppe Notarstefano / Co-chair: Gildas Besancon

2007/08/22

REDUCTION OF AMPLITUDE DEPENDENT GAIN VARIATIONS IN CONTROL OF NON-LINEAR WIENER TYPE SYSTEMS

14:50 to 15:10

Torbjorn Wigren (Uppsala University, Sweden)
Linda Brus (Uppsala University, Sweden)

2007/08/22

OUTPUT FEEDBACK REGULATION OF A FLEXIBLE JOINT MANIPULATOR

15:10 to 15:30

Miguel Rios-Bolivar (Universidad de Los Andes, Venezuela)
Alirio Navas (Universidad de Los Andes, Venezuela)

2007/08/22

A STATE FEEDBACK CONTROL METHODOLOGY FOR NONLINEAR SYSTEMS WITH TIME/STATE DEPENDENT INPUT DELAY

15:30 to 15:50

Gildas Besancon (INPG-GIPSAIab, France)
Didier Georges (INPG-GIPSAIab, France)
Zohra Benayache (INPG-GIPSAIab, France)

2007/08/22

COMPUTING FEASIBLE TRAJECTORIES FOR CONTROL-CONSTRAINED SYSTEMS: THE PVTOL EXAMPLE

15:50 to 16:10

Giuseppe Notarstefano (Università del Salento, Italy)
John Hauser (University of Colorado, Boulder, United States)
Ruggero Frezza (University of Padova, Italy)

2007/08/22

ADAPTIVE CONTROL REDESIGN FOR NONLINEAR SAMPLED-DATA SYSTEMS

16:10 to 16:30

Laurent Burlion (DGA/LRBA, France)
Tarek Ahmed-Ali (ENSIETA, France)
Romain Postoyan (L2S - CNRS, France)
Françoise Lamnabhi-Lagarrigue (L2S - CNRS, France)

2007/08/22

MODEL REDUCTION OF NONLINEAR SYSTEMS: A GREY-BOX MODELING APPROACH

16:30 to 16:50

Leyla Ozkan (IPCOS, The Netherlands)
Reinout Romijn (Aachen University, Germany)
Siep Weiland (Technical University of Eindhoven, The Netherlands)
Wolfgang Marquardt (Aachen University, Germany)
Jobert Ludlage (IPCOS, The Netherlands)

Plenary 3

P03

Venue: Diamond

Chair: Frank Allgöwer

2007/08/23

09:00 to 10:00

PROBING BIOLOGICAL CELL NETWORKS USING MATHEMATICAL MODELS

Robin Raffard (Stanford University, United States)

Keith Amonlirdvima (Stanford University, United States)

Jeffrey Axelrod (Stanford University, United States)

Claire Tomlin (Stanford/UC Berkeley, United States)

Semi-Plenary 5

SP05

Venue: Diamond

Chair: Ülle Kotta

2007/08/23

ANALYSIS OF THE HIV DYNAMICS

10:10 to 11:40

Claude Moog (IRCCyN CNRS, France)

Djomangan Adama Ouattara (IRCCyN, France)

Marie-José Mhawej (IRCCyN, France)

Semi-Plenary 6

SP06

Venue: Ruby

Chair: Sergej Celikovsky

2007/08/23

ANALYSIS AND SYNTHESIS OF DISTURBANCE OBSERVER AS A TOOL FOR NONLINEAR ROBUST CONTROL

10:10 to 11:40

Juhoon Back (Seoul National University, Republic of Korea)

Hyungbo Shim (Seoul National University, Republic of Korea)

Novel applications of NMPC

NA-NMPC

S03

Invited Session

Organized by Mircea Lazar, Eindhoven University of Technology, The Netherlands; Daniel Limon, Universidad de Sevilla, Spain; Davide Raimondo, Università di Pavia, Italy

Venue: Diamond

Chair: Mircea Lazar / Co-chair: Davide Raimondo

2007/08/23

ASSESSMENT OF NONLINEAR PREDICTIVE CONTROL TECHNIQUES FOR DC-DC CONVERTERS

11:10 to 11:30

A.G. Beccuti (ETH Zurich, Switzerland)
M. Lazar (Eindhoven University of Technology, The Netherlands)
W.P.M.H Heemels (Eindhoven University of Technology, The Netherlands)
G. Papafotiou (ETH Zurich, Switzerland)
M. Morari (ETH Zurich, Switzerland)

2007/08/23

PREDICTIVE CONTROL WITH ROBUST DEAD-TIME COMPENSATION: APPLICATION TO DRUG DOSING DURING ANESTHESIA

11:30 to 11:50

Bismark Torrico (Federal University of Santa Catarina, Brazil)
Robin De Keyser (University of Ghent, Belgium)
Clara Ionescu (University of Ghent, Belgium)
Julio E. Normey-Rico (Federal University of Santa Catarina, Brazil)

2007/08/23

MIXED INTEGER PREDICTIVE CONTROL OF A BUCK BOOST CONVERTER

11:50 to 12:10

Daniel Sarabia (University of Valladolid, Spain)
Martín J. Pomar (Federal University of Santa Catarina, Brazil)
Julio E. Normey-Rico (Federal University of Santa Catarina, Brazil)
César de Prada (University of Valladolid, Spain)

2007/08/23

APPLICATION OF A SMITH PREDICTOR BASED NONLINEAR PREDICTIVE CONTROLLER TO A SOLAR POWER PLANT

12:10 to 12:30

Manuel Gálvez-Carrillo (Université Libre de Bruxelles, Belgium)
Robin De Keyser (Ghent University, Belgium)
Clara Ionescu (Ghent University, Belgium)

2007/08/23

FAST NMPC OF A DC-DC CONVERTER: AN EXACT NEWTON REAL-TIME ITERATION APPROACH

12:30 to 12:50

Julian Bonilla (K.U. Leuven, Belgium)
Robin De Keyser (Ghent University, Belgium)
Moritz Diehl (K.U. Leuven, Belgium)
Jairo Espinosa (Universidad Nacional De Colombia, Colombia)

Observation of nonlinear systems

ONS

S07

Regular Session

Venue: Ruby

Chair: H. Shim / Co-chair: Wilfrid Perruquetti

2007/08/23

DISCUSSIONS ON OBSERVABILITY AND INVERTIBILITY

11:10 to 11:30

Wei Kang (Naval Postgraduate School, United States)

Jean-Pierre Barbot (ENSEA, France)

2007/08/23

SINGLE OUTPUT DEPENDENT QUADRATIC OBSERVABILITY NORMAL FORM

11:30 to 11:50

Zheng Gang (INRIA, France)

Boutat Driss (ENSI, France)

Barbot Jean-Pierre (ENSEA, France)

2007/08/23

OBSERVER DESIGN VIA ABSOLUTE STABILITY FOR A CLASS OF NONLINEAR DESCRIPTOR SYSTEMS

11:50 to 12:10

Tobias Raff (Institute for Systems Theory and Automatic Control, Germany)

Frank Allgöwer (Institute for Systems Theory and Automatic Control, Germany)

2007/08/23

STATE ESTIMATION FOR TWO OUTPUT SYSTEMS IN DISCRETE TIME

12:10 to 12:30

Claudia Califano (Universit`a di Roma, "La Sapienza", Italy)

Salvatore Monaco (Universit`a di Roma, "La Sapienza", Italy)

Dorothee Normand-Cyrot (LSS-CNRS, France)

2007/08/23

A GENERALIZED NORMAL FORM AND NONLINEAR OUTPUTS FOR A CASCADE OBSERVER

12:30 to 12:50

Driss Boutat (LVR/ENSI, France)

Salim Chaib (University of Orléans, France)

Frédéric Kratz (LVR/ENSI, France)

Hassan Hammouri (LAGEP / Univ Lyon, France)

2007/08/23

HOMOGENEOUS OBSERVERS WITH DYNAMIC HIGH GAINS

12:50 to 13:10

Vincent Andrieu (Imperial College, United Kingdom)

Laurent Praly (Ecole des Mines de Paris, France)

Alessandro Astolfi (Imperial College, United Kingdom)

New approaches to stability and stabilization

NASS

S12

Regular Session

Venue: Emerald

Chair: Peter Wieland / Co-chair: Christophe Prieur

2007/08/23

CONSTRUCTIVE SAFETY USING CONTROL BARRIER FUNCTIONS

11:10 to 11:30

Peter Wieland (University of Stuttgart, Germany)

Frank Allgöwer (University of Stuttgart, Germany)

2007/08/23

TRANSITIONS BETWEEN LIMIT CYCLES FOR AN UNDERACTUATED SYSTEM: VIRTUAL HOLONOMIC CONSTRAINTS APPROACH

11:30 to 11:50

Leonid Freidovich (Umea University, Sweden)

Anton Shiriaev (Umea University, Sweden)

Ian Manchester (Umea University, Sweden)

2007/08/23

PORT-CONTACT SYSTEMS IN BILATERAL TELEMANIPULATION

11:50 to 12:10

Cristian Secchi (University of Modena and Reggio Emilia, Italy)

Stefano Stramigioli (EEMCS, University of Twente, The Netherlands)

Cesare Fantuzzi (University of Modena and Reggio Emilia, Italy)

2007/08/23

PORT-BASED ENERGY BALANCE ON COMPACT MANIFOLDS

12:10 to 12:30

Gou Nishida (The Institute of Physical and Chemical Research (RIKEN), Japan)

Ryuji Enomoto (Toba National College of Maritime Technology, Japan)

Masaki Yamakita (Tokyo Institute of Technology/RIKEN, Japan)

Zhiwei Luo (Kobe University/RIKEN, Japan)

2007/08/23

RELAXED CHARACTERIZATIONS OF SMOOTH PATCHY CONTROL LYAPUNOV FUNCTIONS

12:30 to 12:50

Rafal Goebel (University of Washington, United States)

Christophe Prieur (LAAS-CNRS, France)

Andrew R. Teel (University of California, Santa Barbara, United States)

2007/08/23

UNITING LOCAL AND GLOBAL OUTPUT FEEDBACK CONTROLLERS

12:50 to 13:10

Christophe Prieur (LAAS-CNRS, France)

Andrew R. Teel (University of California, Santa Barbara, United States)

Tracking of nonlinear systems

TNS

S17

Regular Session

Venue: Amethyst

Chair: Lorenzo Marconi / Co-chair: Yu-Ping Tian

2007/08/23

OUTPUT REGULATION: GEOMETRIC VIEWPOINTS

11:10 to 11:30

Francesco Delli Priscoli (Sapienza - Universita di Roma, Italy)
Alberto Isidori (Sapienza - Universita di Roma, Italy)
Marconi Lorenzo (Universita di Bologna, Italy)

2007/08/23

TOWARDS A MODEL-FREE OUTPUT TRACKING OF SWITCHED NONLINEAR SYSTEMS

11:30 to 11:50

Romain Bourdais (LAGIS, France)
Michel Fliess (Ecole Polytechnique, France)
Cédric Join (Université Poincaré, France)
Wilfrid Perruquetti (LAGIS, France)

2007/08/23

GENERALIZED NONLINEAR MANEUVER REGULATION

11:50 to 12:10

Jiangfeng Zhang (University of Pretoria, South Africa)

2007/08/23

TRACKING OF NONHOLONOMIC CHAINED-FORM SYSTEMS WITHOUT PERSISTENT EXCITATION

12:10 to 12:30

Yu-Ping Tian (Southeast University, China)
Ke-Cai Cao (Southeast University, China)

2007/08/23

STRAIGHT LINE PATH FOLLOWING FOR FORMATIONS OF UNDERACTUATED SURFACE VESSELS

12:30 to 12:50

Alexey Pavlov (Norwegian University of Science and Technology, Norway)
Even Børhaug (Norwegian University of Science and Technology, Norway)
Elena Panteley (CNRS-Supelec, France)
Kristin Yttersatd Pettersen (Norwegian University of Science and Technology, Norway)

2007/08/23

A NEW PERSPECTIVE ON STABLE INVERSION OF NON-MINIMUM PHASE NONLINEAR SYSTEMS

12:50 to 13:10

Alexey Pavlov (Norwegian University of Science and Technology, Norway)
Kristin Y. Pettersen (Norwegian University of Science and Technology, Norway)

Biological and biomedical systems

BBS

S21

Regular Session

Venue: Garnet

Chair: Chun-Liang Lin / Co-chair: Silviu-Iulian Niculescu

2007/08/23

LINEAR AND NONLINEAR METHODS FOR GENE REGULATORY NETWORK INFERENCE

11:10 to 11:30

Nicola Soranzo (SISSA, Italy)
Ginestra Bianconi (ICTP, Italy)
Claudio Altafini (SISSA, Italy)

2007/08/23

BIFURCATION ANALYSIS OF THE CONTROL MECHANISM OF PACEMAKER ACTIVITY IN A MATHEMATICAL CARDIAC CELL MODEL

11:30 to 11:50

Karima Djabella (INRIA, France)
Mayer Landau (CNRS, France)
Michel Sorine (INRIA, France)

2007/08/23

A DIRECT-REVERSE TIME INTERVAL OBSERVER. APPLICATION TO BIOTECHNOLOGICAL MODELS.

11:50 to 12:10

Marcelo Moisan (INRIA Sophia-Antipolis, France)
Olivier Bernard (INRIA Sophia-Antipolis, France)

2007/08/23

MODELLING OF THE CO-INFECTION DYNAMICS OF HIV-1 AND M. TUBERCULOSIS

12:10 to 12:30

Eben Francois du Toit (Nokia Siemens Networks, South Africa)

2007/08/23

ANAYSIS AND CONTROL DESIGN FOR HUMAN POSTURAL BALANCING SYSTEMS

12:30 to 12:50

Chun-Liang Lin (National Chung Hsing University, Taiwan)
Ching-Lung Li (National Chung Hsing University, Taiwan)
Yu-Che Lin (National Chung Hsing University, Taiwan)

2007/08/23

ON STABILITY OF A COMBINED GLEEVEC AND IMMUNE MODEL CHRONIC IN LEUKEMIA: EXPLOITING DELAY SYSTEM STRUCTURE

12:50 to 13:10

Silviu-Iulian Niculescu (CNRS-Supelec, France)
Peter Kim (Stanford University, United States)
Peter Lee (Stanford University, United States)
Doron Levy (Stanford University, United States)

Semi-Plenary 7

SP07

Venue: Diamond

Chair: Tamer Basar

2007/08/23

NETWORKED CONTROL SYSTEMS: AN EMULATION APPROACH TO CONTROLLER DESIGN

14:10 to 14:40

Dragan Nesic (The University of Melbourne, Australia)

Semi-Plenary 8

SP08

Venue: Ruby

Chair: Kurt Schlacher

2007/08/23

MODEL REDUCTION BY MOMENT MATCHING

14:10 to 14:40

Alessandro Astolfi (Imperial College London and University of Rome "Tor Vergata", United Kingdom)

Model predictive control with applications

MPCA

S04

Regular Session

Venue: Diamond

Chair: Martin Guay / Co-chair: Loutjie C. Coetsee

2007/08/23

ON RELAXATIONS APPLICABLE TO MODEL PREDICTIVE CONTROL FOR SYSTEMS WITH BINARY CONTROL SIGNALS

14:50 to 15:10

Daniel Axehill (Linköpings University, Sweden)
Lieven Vandenberghe (University of California, Los Angeles, United States)
Anders Hansson (Linköpings University, Sweden)

2007/08/23

NONLINEAR MODEL PREDICTIVE CONTROL OF A FAST PARALLEL ROBOT ACTUATED BY PNEUMATIC MUSCLES

15:10 to 15:30

Dominik Schindele (University of Rostock, Germany)
Harald Aschemann (University of Rostock, Germany)

2007/08/23

GEOMETRIC CONSTRUCTION OF PERIODIC TRAJECTORIES

15:30 to 15:50

Kai Hoeffner (University of Stuttgart, Germany)
Nicolas Hudon (Queen's University, Canada)
Martin Guay (Queen's University, Canada)

2007/08/23

NETWORKED DECENTRALIZED MPC FOR UNICYCLE VEHICLES FORMATION

15:50 to 16:10

Massimo Vaccarini (Università Politecnica delle Marche, Italy)
Sauro Longhi (Università Politecnica delle Marche, Italy)

2007/08/23

AN INTELLIGENT GENERALIZED PREDICTIVE CONTROLLER FOR SHIP STEERING

16:10 to 16:30

YaoHua Hu (Dongguan University of Technology, China)
SuWu Xu (Dongguan University of Technology, China)
Zongnian Zhang (Dongguan University of Technology, China)

2007/08/23

STABILIZING OUTPUT FEEDBACK RECEDING HORIZON CONTROL OF SAMPLED-DATA NONLINEAR SYSTEMS VIA THEIR APPROXIMATE DISCRETE-TIME MODELS

16:30 to 16:50

Ahmed Elaiw (Al-Azhar University Assiut, Egypt)

Robust estimation of nonlinear systems

RENS

S08

Regular Session

Venue: Ruby

Chair: Franck Plestan / Co-chair: Carlos E. de Souza

2007/08/23

ROBUST TRAJECTORY TRACKING FOR A CLASS OF UNCERTAIN NONLINEAR SYSTEMS

14:50 to 15:10

Engelbert Gruenbacher (Linz Center of Mechatronics, Austria)
Luigi del Re (Johannes Kepler University Linz, Austria)

2007/08/23

ROBUST H-INFINITY FILTERING FOR A CLASS OF NONLINEAR DISCRETE-TIME SYSTEMS

15:10 to 15:30

Daniel F. Coutinho (Pontifícia Univ. Católica do Rio Grande do Sul, Brazil)
Carlos E. de Souza (Laboratório Nacional de Computação Científica, Brazil)
Karina A. Barbosa (Laboratório Nacional de Computação Científica, Brazil)

2007/08/23

A STOCHASTIC ROBUSTNESS APPROACH TO DESIGNING UNKNOWN INPUT OBSERVERS FOR NON-LINEAR SYSTEMS

15:30 to 15:50

Marcin Witczak (University of Zielona Gora, Poland)
Przemyslaw Pretki (University of Zielona Gora, Poland)
Jozef Korbicz (University of Zielona Gora, Poland)

2007/08/23

ON THE HAMILTONIAN TECHNIQUES FOR DESIGNING NONLINEAR OBSERVERS UNDER SET-MEMBERSHIP UNCERTAINTY

15:50 to 16:10

Mikhail Gusev (Ural Branch of RAS, Russia)
Alexander Kurzhanski (Moscow State (Lomonosov) University, Russia)

2007/08/23

ANALYSIS OF HOPF BIFURCATION FOR AN INTERNET CONGESTION CONTROL SYSTEM

16:10 to 16:30

Mohammad Reza Jahed Motlagh (Iran University of Science and Technology, Iran)
Behrooz Rezaie (Iran University of Science and Technology, Iran)
Siavash Khorsandi (Amirkabir University of Technology, Iran)
Morteza Analoui (Iran University of Science and Technology, Iran)

2007/08/23

NONLINEAR UNKNOWN INPUT OBSERVER ON A STOCHASTIC FRAMEWORK

16:30 to 16:50

Thibault Cheviron (LRBA-DGA/IRCCyN, France)
Franck Plestan (IRCCyN, France)
Abdelhamid Chriette (IRCCyN, France)

Stability and stabilization of systems with nonlinearities in the input

SSSNI

S13

Invited Session

Organized by Christophe Prieur and Sophie Tarbouriech, LAAS-CNRS, France

Venue: Emerald

Chair: Christophe Prieur / Co-chair: Sophie Tarbouriech

2007/08/23

STABILIZATION OF A CLASS OF NONLINEAR SYSTEMS WITH SATURATING ACTUATORS VIA SLIDING MODE CONTROL

14:50 to 15:10

Maria Letizia Corradini (Università di Camerino, Italy)
Giuseppe Orlando (Università Politecnica delle Marche, Italy)
Valentina Orsini (Università Politecnica delle Marche, Italy)
Gianfranco Parlangeli (Università di Lecce, Italy)

2007/08/23

ROBUST ADAPTIVE CONTROL OF NONLINEAR SYSTEMS WITH UNKNOWN INPUT HYSTERESIS WITH KP PRESENTATION

15:10 to 15:30

Yu-Feng Wang (Concordia University, Canada)
Chun-Yi Su (Concordia University, Canada)
Henry Hong (Concordia University, Canada)

2007/08/23

STABILITY ANALYSIS FOR SYSTEMS WITH BACKLASH AND SATURATED ACTUATOR

15:30 to 15:50

Sophie Tarbouriech (LAAS-CNRS, France)
Christophe Prieur (LAAS-CNRS, France)

2007/08/23

A PRACTICAL METHOD FOR FIXED-ORDER ANTI-WINDUP DESIGN

15:50 to 16:10

Jean-Marc Biannic (ONERA, France)
Clément Roos (ONERA/SUPAERO, France)
Sophie Tarbouriech (LAAS/CNRS, France)

2007/08/23

STABILITY CRITERIA FOR RATE LIMITED LUR'E SYSTEMS WITH CONNECTIONS TO MAGNITUDE LIMITS AND ANTI-WINDUP

16:10 to 16:30

Murray Kerr (University of Leicester, United Kingdom)
Matthew Turner (University of Leicester, United Kingdom)
Ian Postlethwaite (University of Leicester, United Kingdom)

2007/08/23

NONLINEAR L2 ANTI-WINDUP FOR ENLARGED STABILITY REGIONS AND REGIONAL PERFORMANCE

16:30 to 16:50

Sergio Galeani (Università di Roma, Tor Vergata, Italy)
Simona Onori (Università di Roma, Tor Vergata, Italy)
Andrew R. Teel (University of California, Santa Barbara, United States)
Luca Zaccarian (Università di Roma, Tor Vergata, Italy)

Algebraic approach to nonlinear systems

AANS

S18

Regular Session

Venue: Amethyst

Chair: Claude Moog / Co-chair: Ülle Kotta

2007/08/23

CONSTRUCTION OF FLAT OUTPUTS BY REDUCTION AND ELIMINATION

14:50 to 15:10

Kurt Schlacher (Johannes Kepler University Linz, Austria)
Markus Schöberl (Johannes Kepler University Linz, Austria)

2007/08/23

GENERALIZED STATE EQUATIONS FOR CONTINUOUS-TIME BILINEAR INPUT-OUTPUT EQUATIONS: REMOVING THE INPUT DERIVATIVES

15:10 to 15:30

Tanel Mullari (Institute of Cybernetics at TUT, Estonia)
Ülle Kotta (Institute of Cybernetics at TUT, Estonia)
Palle Kotta (Institute of Cybernetics at TUT, Estonia)
Alan Zinober (The University of Sheffield, United Kingdom)

2007/08/23

IRREDUCIBILITY CONDITIONS FOR NONLINEAR INPUT-OUTPUT EQUATIONS ON HOMOGENEOUS TIME SCALES

15:30 to 15:50

Zbigniew Bartosiewicz (Bialystok Technical University, Poland)
Ülle Kotta (Institute of Cybernetics at TUT, Estonia)
Ewa Pawluszewicz (Bialystok Technical University, Poland)
Malgorzata Wyrwas (Institute of Cybernetics at TUT, Estonia)

2007/08/23

PSEUDO-LINEAR ALGEBRA: A POWERFUL TOOL IN UNIFICATION OF THE STUDY OF NONLINEAR CONTROL SYSTEMS

15:50 to 16:10

Miroslav Halás (Slovak University of Technology, Slovakia)
Ülle Kotta (Tallinn University of Technology, Estonia)

2007/08/23

THE POLE-ZERO STRUCTURE OF NONLINEAR CONTROL SYSTEMS

16:10 to 16:30

Anna Maria Perdon (Università Politecnica delle Marche, Italy)
Claude Moog (IRCCyN, France)
Giuseppe Conte (Università Politecnica delle Marche, Italy)

Nonlinear estimation and control of biochemical systems

NECBS

S22

Invited Session

Organized by Alain Vande Wouwer, Faculté Polytechnique de Mons, Belgium; Isabelle Queinnec, LAAS-CNRS, France

Venue: Garnet

Chair: Alain Vande Wouwer / Co-chair: Isabelle Queinnec

2007/08/23

PETRI NET TOOLS FOR THE ANALYSIS OF PERSISTENCE IN CHEMICAL NETWORKS

14:50 to 15:10

David Angeli (University of Florence, Italy)
Patrick De Leenheer (University of Florida, United States)
Eduardo Sontag (Rutgers University, United States)

2007/08/23

DISCRETE-TIME INTERVAL OBSERVERS APPLIED TO CULTURES OF PHYTOPLANKTON

15:10 to 15:30

Guillaume Goffaux (Faculté Polytechnique de Mons, Belgium)
Alain Vande Wouwer (Faculté Polytechnique de Mons, Belgium)
Olivier Bernard (INRIA, France)

2007/08/23

ON AUTOMATIC SEEKING OF OPTIMAL STEADY-STATES IN BIOCHEMICAL PROCESSES

15:30 to 15:50

Georges Bastin (CESAME - Université Catholique de Louvain, Belgium)
Dragan Netic (The University of Melbourne, Australia)
Ying Tan (The University of Melbourne, Australia)
Iven Mareels (The University of Melbourne, Australia)

2007/08/23

A FORMAL FRAMEWORK FOR MULTIPLICITY DETECTION AND ITS IMPLICATIONS IN ROBUST CONTROL OF BIOCHEMICAL NETWORKS

15:50 to 16:10

Irene Otero-Muras (Spanish Council for Scientific Research, Spain)
Antonio A. Alonso (Spanish Council for Scientific Research, Spain)
Julio R. Banga (Spanish Council for Scientific Research, Spain)

2007/08/23

ON THE USE OF NONLINEAR RECEDING-HORIZON OBSERVERS IN BATCH TERPOLYMERIZATION PROCESSES WITH PARTIALLY UNMODELLED DYNAMICS: FORMULATION AND EXPERIMENTAL VALIDATION

16:10 to 16:30

Mazen Alamir (CNRS-University of Grenoble, France)
Nida SheibatT-Othman (LAGEP-University of Lyon, France)
Sami Othman (LAGEP University of Lyon, France)

2007/08/23

CONVERGENCE OF MULTI-UNIT OPTIMIZATION WITH NON-IDENTICAL UNITS: APPLICATION TO THE OPTIMIZATION OF A BIOREACTOR

16:30 to 16:50

Lyne Woodward (École Polytechnique de Montréal, Canada)
Michel Perrier (École Polytechnique de Montréal, Canada)
Bala Srinivasan (École Polytechnique de Montréal, Canada)

Semi-Plenary 9

SP09

Venue: Diamond

Chair: Jean-Pierre Barbot

2007/08/24

**BIFURCATION CONTROL: NEW DIRECTIONS MOTIVATED BY BIOLOGY AND
COMPLEX ENGINEERED SYSTEMS**

09:00 to 09:30

Eyad H. Abed (University of Maryland, United States)

Semi-Plenary 10

SP10

Venue: Ruby

Chair: Fernando Camisani

2007/08/24

TO BE ANNOUNCED

09:00 to 09:30

Shankar Sastry (University of California, Berkeley, United States)

Posters 1

POSTERS 1

Venue: Foyer

Chair: Robert Harrison / Co-chair: Tielong Shen

2007/08/24

AN ADAPTIVE ROBUST STATE OBSERVER SCHEME FOR A CLASS OF UNCERTAIN NONLINEAR DYNAMICAL SYSTEMS

09:40 to 10:40

Hansheng Wu (Prefectural University of Hiroshima, Japan)

2007/08/24

ADAPTIVE STATE FEEDBACK CONTROL OF NONLINEARLY PARAMETERIZED TIME-DELAY SYSTEMS

09:40 to 10:40

Xiaohong Jiao (Yanshan University, China)
Tielong Shen (Sophia University, Japan)
Yuanzhang Sun (Tsinghua University, China)

2007/08/24

ESTIMATION OF PARSIMONIOUS DISCRETE VOLTERRA SERIES

09:40 to 10:40

Robert Harrison (The University of Sheffield, United Kingdom)
Tony Dodd (The University of Sheffield, United Kingdom)

2007/08/24

CRITERIA AND TIME HORIZON IN FEEDFORWARD MPC FOR NON-LINEAR SYSTEMS WITH TIME DELAYS

09:40 to 10:40

Torbjorn Wigren (Uppsala University, Sweden)
Linda Brus (Uppsala University, Sweden)

2007/08/24

DATA-BASED VALIDATION OF NONLINEAR MODELS

09:40 to 10:40

Matias Waller (Åland Polytechnic, Finland)
Mikaal Rönn (Åland Polytechnic, Finland)
Henrik Saxén (Åbo Akademi University, Finland)

2007/08/24

SYNTHESIS OF COMPLETE ORTHONORMAL FRACTIONAL BASIS FUNCTIONS WITH PRESCRIBED POLES

09:40 to 10:40

Huseyin Akcay (Anadolu University, Turkey)

2007/08/24

NONLINEAR CONTROL SYSTEM INVERSION USING LIE SYMMETRIES

09:40 to 10:40

Richard Ocaya (University of the Free-State, South Africa)
Brian Wigdorowitz (University of the Witwatersrand, South Africa)

2007/08/24

09:40 to 10:40

NONLINEAR CONTROL OF A SEQUENTIAL INSPECTION OPERATION

Meir Pachter (Air Force Institute of Technology, United States)
Phillip Chandler (AFRL, United States)
Darbha Swaroop (AFRL, United States)

2007/08/24

09:40 to 10:40

GEOMETRICAL CONDITIONS FOR OBSERVER ERROR LINEARIZATION VIA \mathcal{H}_∞ OPTIMIZATION

Driss Boutat (ENSI de Bourges, France)

2007/08/24

09:40 to 10:40

STABILIZATION OF LINEAR SWITCHED CONTROLLED SYSTEMS

Zoltan Szabo (Hungarian Academy of Sciences, Hungary)
Jozsef Bokor (Hungarian Academy of Sciences, Hungary)
Gary Balas (University of Minnesota, United States)

2007/08/24

09:40 to 10:40

A FOLIATION FOR UNKNOWN INPUTS RECONSTRUCTION

Salim Chaib (University of Orleans, France)
Driss Boutat (LVR/ ENSIB, France)
Abderraouf Benali (LVR/ ENSIB, France)
Frédéric Kratz (LVR/ ENSIB, France)

2007/08/24

09:40 to 10:40

ON OPTIMIZING NONLINEAR ADAPTIVE CONTROL ALLOCATION WITH ACTUATOR DYNAMICS

Johannes Tjønnås (Norwegian University of Science and Technology, Norway)
Tor Arne Johansen (Norwegian University of Science and Technology, Norway)

2007/08/24

09:40 to 10:40

ON STABILITY AND CONTROL OF SYSTEMS WITH TIME-VARYING SAMPLING PERIOD AND TIME DELAY

Michal Izák (University of Kaiserslautern, Germany)
Daniel Görjes (University of Kaiserslautern, Germany)
Steven Liu (University of Kaiserslautern, Germany)

2007/08/24

09:40 to 10:40

GEOMETRIC ANALYSIS OF TIME VARIANT HAMILTONIAN CONTROL SYSTEMS

Markus Schöberl (Johannes Kepler University Linz, Austria)
Richard Stadlmayr (Linz Center of Mechatronics, Austria)
Kurt Schlacher (Johannes Kepler University Linz,)

2007/08/24

09:40 to 10:40

H-INFINITY SMOOTHER FOR LIPSCHITZ NONLINEAR SYSTEMS

Philippe Neveux (University of Avignon, France)
Eric Blanco (Ecole Centrale of Lyon, France)

2007/08/24

EXPLICIT FORM OF LYAPUNOV FUNCTIONS FOR A CLASS OF NONLINEAR FEEDBACK SYSTEMS AUGMENTED BY OBSERVERS

09:40 to 10:40

Anton Shiriaev (Umea University, Sweden)
Rolf Johansson (Lund University, Sweden)
Anders Robertsson (Lund University, Sweden)

2007/08/24

GEOMETRICAL CONDITIONS FOR OBSERVER ERROR LINEARIZATION WITH A DIFFEOMORPHISM ON THE OUTPUTS.

09:40 to 10:40

Driss Boutat (LVR/ENSI, France)
Abderraouf Benali (LVR/ENSI, France)
Hassan Hammouri (LAGEP, France)

2007/08/24

CONSTRUCTIVE TRANSFORMATION OF NONLINEAR SYSTEMS INTO A SPECIAL STATE AFFINE MIMO FORMS AND NONLINEAR OBSERVERS

09:40 to 10:40

Ibrahim Souleiman (University of Djibouti, Republic of Djibouti)
Alain Glumineau (IRCCyN, France)

2007/08/24

STRONG FEASIBILITY IN INPUT-MOVE-BLOCKING MODEL PREDICTIVE CONTROL

09:40 to 10:40

Ravi Gondhalekar (Tokyo Institute of Technology, Japan)
Jun-ichi Imura (Tokyo Institute of Technology, Japan)

2007/08/24

ROBUST FLATNESS BASED CONTROLLER DESIGN USING INTERVAL METHODS

09:40 to 10:40

Marco Kletting (University of Ulm, Germany)
Felix Anritter (University of Erlangen-Nürnberg, Germany)
Eberhard P. Hofer (University of Ulm, Germany)

2007/08/24

CONTROLLABILITY OF ISOSPECTRAL BILINEAR CONTROL SYSTEMS ON COMPLEX FLAG MANIFOLDS

09:40 to 10:40

Claudio Altafini (SISSA, Italy)

2007/08/24

MULTIVARIABLE RBF-ARX MODEL-BASED PREDICTIVE CONTROL FOR NONLINEAR SYSTEMS

09:40 to 10:40

Hui Peng (Central South University, China)

2007/08/24

INTERPOLATION PROBLEMS ON RIEMANNIAN MANIFOLDS - A GEOMETRIC APPROACH -

09:40 to 10:40

Rui Rodrigues (University of Coimbra, Portugal)
Fátima Silva Leite (University of Coimbra, Portugal)

2007/08/24

**MODEL-FREE HIGH ORDER DIFFERENTIAL STATES OBSERVER FOR
NONLINEAR AFFINE SYSTEM**

09:40 to 10:40

Guoyuan Qi (Tshwane University of Technology, South Africa)
Michaël Antonie van Wyk (Tshwane University of Technology, South Africa)
Barend Jacobus van Wyk (Tshwane University of Technology, South Africa)

2007/08/24

**CONSTRAINED CONTROLLABILITY OF SEMILINEAR SYSTEMS WITH MULTIPLE
DELAYS IN CONTROL**

09:40 to 10:40

Klamka Jerzy (Silesian University of Technology, Poland)

Posters 2

POSTERS 2

Venue: Foyer

Chair: Jimoh Pedro / Co-chair: Alain Glumineau

2007/08/24

AN EXTENDED UNKNOWN INPUT OBSERVER-BASED APPROACH TO FAULT DIAGNOSIS OF A TWO-TANK SYSTEM

09:40 to 10:40

Jozef Korbicz (University of Zielona Gora, Poland)
Marcin Witczak (University of Zielona Gora, Poland)

2007/08/24

FEEDBACK LINEARIZATION BASED CONTROL OF A ROTATIONAL HYDRAULIC DRIVE

09:40 to 10:40

Jaho Seo (ETS, Canada)
Ravinder Venugopal (Sysendes, Inc. & ETS, Canada)
Jean-Pierre Kenne (ETS, Canada)

2007/08/24

EXTRACTION OF MOTION FOR 4-WHEEL DRIVE, 4-WHEEL STEER MOBILE ROBOT WITH REDUCED ORDER HAMILTONIAN MODEL

09:40 to 10:40

Kursat Yalcin (Istanbul Technical University, Turkey)
Murat Yesiloglu (Istanbul Technical University, Turkey)
Hakan Temeltas (Istanbul Technical University, Turkey)

2007/08/24

APPLICATION OF RESET CONTROL TO A BATCH REACTOR IN THE PRECIOUS GROUP METALS INDUSTRY

09:40 to 10:40

Roanne Lahee (Anglo Platinum, South Africa)

2007/08/24

IDENTIFIABILITY OF THE PARAMETERS OF A NONLINEAR MODEL OF THE CEREBROSPINAL FLUID SYSTEM

09:40 to 10:40

Ian Manchester (Umea University, Sweden)
Kennet Andersson (Umea University Hospital, Sweden)
Anders Eklund (Umea University Hospital, Sweden)
Anton Shiriaev (Umea University, Sweden)

2007/08/24

HYBRID OPTIMAL CONTROL OF AN AUTOMATED MANUAL TRANSMISSION SYSTEM

09:40 to 10:40

Gianluca Lucente (University of Bologna, Italy)
Marcello Montanari (University of Bologna, Italy)
Carlo Rossi (University of Bologna, Italy)

2007/08/24

09:40 to 10:40

PID+ BACKSTEPPING CONTROL OF RELATIVE SPACECRAFT ATTITUDE

Thomas R. Krogstad (Norwegian University of Science, Norway)
Raymond Kristiansen (Narvik University College, Norway)
Jan Tommy Gravdahl (Norwegian University of Science, Norway)
Per Johann Nicklasson (Narvik University College, Norway)

2007/08/24

09:40 to 10:40

LOGIC BASED DESIGN OF OPTIMAL RECONFIGURATION STRATEGIES FOR SHIP POWER SYSTEMS

Harry Kwatny (Drexel University, United States)
Ed Mensah (Drexel University, United States)
Dagmar Niebur (Drexel University, United States)
Gaurav Bajpai (Techno-Sciences, Inc., United States)
Carole Teolis (Techno-Sciences, Inc., United States)

2007/08/24

09:40 to 10:40

NEURAL NETWORK-BASED DYNAMIC INVERSION CONTROLLER FOR FIGHTER AIRCRAFTS

Jimoh Pedro (University of the Witwatersrand, South Africa)
Nicolas Meyer (University of the Witwatersrand, South Africa)

2007/08/24

09:40 to 10:40

A FLAT MODEL PREDICTIVE CONTROLLER FOR TRAJECTORY TRACKING IN IMAGE BASED VISUAL SERVOING

Allibert Guillaume (Université d'Orléans, France)
Courtial Estelle (Université d'Orléans, France)
Touré Youssoufi (Université d'Orléans, France)

2007/08/24

09:40 to 10:40

GPS-DENIED SOURCE SEEKING FOR A NONHOLONOMIC UNICYCLE VIA HEADING CONTROL

Jennie Cochran (University of California, San Diego, United States)
Antranik Siranosian (University of California, San Diego, United States)
Nima Ghods (University of California, San Diego, United States)
Daniel Arnold (University of California, San Diego, United States)
Miroslav Krstic (University of California, San Diego, United States)

2007/08/24

09:40 to 10:40

MODEL AND ROBUST CONTROL OF AN ELECTROPNEUMATIC ACTUATOR ON A EXPERIMENTAL SETUP

Alexis Girin (IRCCyN, France)
Franck Plestan (IRCCyN, France)
Xavier Brun (AMPERE-INSA de Lyon, France)
Alain Glumineau (IRCCyN, France)
Mohamed Smaoui (AMPERE-INSA de Lyon,)

2007/08/24

09:40 to 10:40

SENSORLESS SLIDING MODE CONTROL FOR ELECTROMAGNET

Pavel Shavrin (Togliatti State University, Russia)
Alexander Gostkov (Togliatti State University, Russia)
Sergey Kochetkov (Togliatti State University, Russia)

2007/08/24

09:40 to 10:40

NEURO-FUZZY CONTROL OF A SINGLE POINT LATHE CUTTING TOOL

R Marumo (University of Botswana, Botswana)

O Motsamai (University of Botswana, Botswana)

T Bodika (University of Botswana, Botswana)

2007/08/24

09:40 to 10:40

A NEURAL NETWORK MODEL FOR CONTROL OF WASTEWATER TREATMENT PROCESSES

Carl Kriger (Cape Peninsula University of Technology, South Africa)

Raynitchka Tzoneva (Cape Peninsula University of Technology, South Africa)

2007/08/24

09:40 to 10:40

OPTIMAL CLOSED-LOOP CONTROLLER DESIGN FOR AN ION EXCHANGE PROCESS USED FOR DESALINATION OF WATER

N Dube (Cape Peninsula University of Technology, South Africa)

2007/08/24

09:40 to 10:40

OBSERVER-BASED BRAKE CONTROL FOR RAILWAYS

Gaspar Peter (Computer and Automation Research Institute, Hungary)

Szabo Zoltan (Computer and Automation Research Institute, Hungary)

Bokor Jozsef (Computer and Automation Research Institute, Hungary)

2007/08/24

09:40 to 10:40

FAULT-TOLERANT CONTROL OF HEAVY HAUL TRAINS

Xiangtao Zhuan (University of Pretoria, South Africa)

Nonlinear control in industrial applications

NCIA

S25

Regular Session

Venue: Diamond

Chair: Fabrice Villaume / Co-chair: Kevin Brooks

2007/08/24

CONTROL LAWS FOR AUTOMATIC TAKE-OFF USING ROBUST NONLINEAR INVERSION TECHNIQUES

11:10 to 11:30

Fabrice Villaume (Airbus France SAS, France)
Matthieu Jeanneau (Airbus France SAS, France)

2007/08/24

ROBUST MPC OF A RUN-OF-MINE ORE MILLING CIRCUIT

11:30 to 11:50

LC Coetzee (University of Pretoria, South Africa)
IK Craig (University of Pretoria, South Africa)

2007/08/24

SIMULATED NEUROCONTROL OF AN AUTOGENOUS MILL WITH EVOLUTIONARY REINFORCEMENT LEARNING

11:50 to 12:10

J W De Villiers Groenewald (University of Stellenbosch, South Africa)
Chris Aldrich (University of Stellenbosch, South Africa)
Jacques J Eksteen (University of Stellenbosch, South Africa)
Alex v E Conradie (University of Stellenbosch, South Africa)
Leon P Coetzer (Anglo Platinum Management Services, South Africa)

2007/08/24

MOVING HORIZON ESTIMATION FOR AN INDUSTRIAL GAS PHASE POLYMERIZATION REACTOR

12:10 to 12:30

Jasmeer Ramlal (Sasol Polymers, South Africa)
Kenneth Allsford (Honeywell International, United States)
John Hedengren (ExxonMobil Chemical, United States)

2007/08/24

ADAPTIVE STATE ESTIMATION IN A SHEAR BUILDING

12:30 to 12:50

René Jiménez (Universidad Nacional Autónoma de México, Mexico)
Luis Alvarez-Icaza (Universidad Nacional Autónoma de México, Mexico)

2007/08/24

A VARIABLE STRUCTURE ADAPTIVE POLE PLACEMENT CONTROL APPLIED TO THE SPEED CONTROL OF A THREE-PHASE INDUCTION MOTOR

12:50 to 13:10

Francisco Silva Junior (Federal University of Rio Grande do Norte, Brazil)
Aldayr Araujo (Federal University of Rio Grande do Norte, Brazil)

Robust observers of nonlinear systems

RONs

S09

Regular Session

Venue: Ruby

Chair: Christopher Edwards / Co-chair: Alain Glumineau

2007/08/24

11:10 to 11:30

TYRE/ROAD FRICTION ESTIMATION USING A SLIDING MODE BASED OBSERVER

Nitin Patel (University of Leicester, United Kingdom)
Christopher Edwards (University of Leicester, United Kingdom)
Sarah Spurgeon (University of Leicester, United Kingdom)

2007/08/24

11:30 to 11:50

SENSOR FDI FOR A CLASS OF NONLINEAR SYSTEMS BASED ON A SLIDING MODE OBSERVER

Xing-Gang Yan (University of Leicester, United Kingdom)
Christopher Edwards (University of Leicester, United Kingdom)

2007/08/24

11:50 to 12:10

DESIGN OF A CONFIDENCE INTERVAL OBSERVER - APPLICATION TO VEHICLE POSITIONING

Guillaume Goffaux (Faculté Polytechnique de Mons, Belgium)
Alain Vande Wouwer (Faculté Polytechnique de Mons, Belgium)
Marcel Remy (Faculté Polytechnique de Mons, Belgium)

2007/08/24

12:10 to 12:30

DESIGN AND ANALYSIS OF A NONLINEAR OBSERVER FOR A HYDRAULIC SERVO SYSTEM

Maria Werlefors (Uppsala University, Sweden)
Alexander Medvedev (Uppsala University, Sweden)

2007/08/24

12:30 to 12:50

SLIDING MODE CONTROLLER DESIGN FOR SENSORLESS INDUCTION MOTOR: EXPERIMENTAL TESTS ON LOW FREQUENCIES BENCHMARK

Dramane Traore (IRCCyN, France)
Jesus De Leon (Universidad Autonoma, Mexico)
Alain Glumineau (IRCCyN, France)
Luc Loron (IREENA, France)

2007/08/24

12:50 to 13:10

AN ALGEBRAIC PARAMETER ESTIMATION APPROACH FOR THE ADAPTIVE OBSERVER-CONTROLLER BASED REGULATION OF THE "BOOST" CONVERTER

Hebertt Sira-Ramirez (Cinvestav-IPN, Mexico)
Mario Spinetti-Rivera (Universidad Politecnica de Catalunya, Spain)
Enric Fossas-Collet (Universidad Politecnica de Catalunya, Spain)

Nonlinear system stabilization

NSS

S14

Regular Session

Venue: Emerald

Chair: Lorenzo Marconi / Co-chair: Zhendong Sun

2007/08/24

A NOTE ON ROBUST NONLINEAR CONTROL OF FEEDFORWARD SYSTEMS WITH UNMODELED DYNAMICS

11:10 to 11:30

Tianshi Chen (The Chinese University of Hong Kong, Hong Kong)
Jie Huang (The Chinese University of HongKong, Hong Kong)

2007/08/24

SOME RESULTS ON ROBUST OUTPUT FEEDBACK STABILIZATION OF NONLINEAR SYSTEMS

11:30 to 11:50

Lorenzo Marconi (CASY-DEIS University of Bologna, Italy)
Laurent Praly (École des Mines de Paris, France)

2007/08/24

MATRIX SET MEASURE FOR STABILITY OF SWITCHED LINEAR SYSTEMS

11:50 to 12:10

Zhendong Sun (South China University of Technology, China)

2007/08/24

STABILIZATION OF HOMOGENEOUS SYSTEMS USING IMPLICIT CONTROL LYAPUNOV FUNCTIONS

12:10 to 12:30

Hisakazu Nakamura (Nara Institute of Science and Technology, Japan)
Nami Nakamura (Nara Institute of Science and Technology, Japan)
Hirokazu Nishitani (Nara Institute of Science and Technology, Japan)

2007/08/24

ON FEEDBACK STABILIZATION OF NONAFFINE DISCRETE TIME NONLINEAR SYSTEMS WITH TIME DELAYS

12:30 to 12:50

Woihida Aggoune (ECS-ENSEA, France)

Nonlinear control in power and electrical drives

NCPED

S24

Regular Session

Venue: Amethyst

Chair: Yuanzhang Sun / Co-chair: Felix Antritter

2007/08/24

THE GAP BETWEEN NONLINEAR CONTROL THEORIES AND APPLICATIONS IN POWER SYSTEMS

11:10 to 11:30

Yuanzhang Sun (Tsinghua University, Beijing, China)
Fang Yang (Tsinghua University, Beijing, China)

2007/08/24

ESTIMATION OF THE REGION OF ATTRACTION FOR A BOOST DC-AC CONVERTER CONTROL LAW

11:30 to 11:50

Carolina Albea (University of Seville, Spain)
Francisco Gordillo (University of Seville, Spain)

2007/08/24

TRACKING CONTROL OF THE ANGULAR VELOCITY OF A DC-MOTOR VIA A BOOST-CONVERTER

11:50 to 12:10

Felix Antritter (Universität Erlangen-Nürnberg, Germany)
Johannes Tautz (Universität Erlangen-Nürnberg, Germany)

2007/08/24

ON THE GENERALIZED PROPORTIONAL INTEGRAL MULTILEVEL SIGMA DELTA SLIDING MODE CONTROL OF A "BUCK" CONVERTER

12:10 to 12:30

Hebertt Sira-Ramirez (CINVESTAV-IPN, Mexico)

2007/08/24

VOLTAGE REGULATION IN NETWORKED ELECTRICAL POWER SYSTEMS FOR DISTRIBUTED GENERATION: A CONSTRAINED SUPERVISORY APPROACH

12:30 to 12:50

Alessandro Casavola (Universita' della Calabria, Italy)
Giuseppe Franze' (Universita' della Calabria, Italy)
Natalino Carelli (Universita' della Calabria, Italy)

Lab applications of nonlinear systems

LANS

S23

Regular Session

Venue: Garnet

Chair: Mazen Alamir / Co-chair: Engelbert Gruenbacher

2007/08/24

A NOTE ON THE CONTROL OF A SPHERICAL INVERTED PENDULUM

11:10 to 11:30

Guangyu Liu (The University of Melbourne, Australia)
Mareels Iven (The University of Melbourne, Australia)
Nesic Dragan (The University of Melbourne, Australia)

2007/08/24

OUTPUT FEEDBACK DESIGN OF A TWIN PENDULUM SYSTEM IN PRESENCE OF SENSOR BIAS

11:30 to 11:50

André Murilo A. Pinto (GIPSA-Lab, France)
Mazen Alamir (CNRS/GIPSA, France)

2007/08/24

A VELOCITY ESTIMATOR RELYING ON FRICTION OBSERVER: APPLICATION TO INVERTED PENDULUM STABILIZATION

11:50 to 12:10

Roland Lenain (Cemagref, France)
Anders Robertsson (Lund University, Sweden)
Rolf Johansson (Lund University, Sweden)
Anton Shiriaev (Umea University, Sweden)
Michel Berducat (Cemagref, France)

2007/08/24

LINEARIZATION BASED H-INFINITY ROBUST STABILIZING PID CONTROL FOR ACTIVE MAGNETIC BEARINGS

12:10 to 12:30

Fuat Gurleyen (ITU, Turkey)
Cagri Bahadir (ITU, Turkey)

2007/08/24

DISCRETE-TIME MODEL REFERENCE CONTROLLER DESIGN FOR A COMBUSTION ENGINE TEST BENCH

12:30 to 12:50

Dina Shona Laila (Johannes Kepler University Linz, Austria)
Engelbert Gruenbacher (Johannes Kepler University Linz, Austria)
Luigi del Re (Johannes Kepler University Linz, Austria)

Plenary 4

P04

Venue: Diamond

Chair: Xiaohua Xia

2007/08/24

**TAKING ADVANTAGE OF HOMOGENEITY: A GENERAL FRAMEWORK FOR
OUTPUT FEEDBACK CONTROL OF UNCERTAIN NONLINEAR SYSTEMS**

14:10 to 15:10

Wei Lin (Case Western Reserve University, United States)

Hao Lei (Case Western Reserve University, United States)