

Electronic Proceedings of  
15th International Symposium  
on the Mathematical Theory  
of Networks and Systems

University of Notre Dame,  
South Bend, Indiana, USA,  
August 12–16, 2002.

*Editors:* David S. Gilliam  
Joachim Rosenthal

## Directions for Using Links

- This File contains the main program and author index for MTNS 2002. It also contains hyperlinks to help navigate to sessions from the author index.
- The paper names in each session which are highlighted (i.e., appear in a different color) are active links to the PDF paper of accepted papers for the Conference CD-ROM.
- If you click on a colored link you will be taken to the appropriate location – either to a session if you click in the author index or to a paper if you click on the name of a highlighted paper.

## ***Monday August 12, 2002***

### **8:30-9:30 Room: 101 Plenary Talk**

*Bruce Hajek,*  
**A Basket of System Theoretic Problems in Communications**

### **9:30-10:30 Room: 101 Invited Talk**

*Roger Brockett,*  
**Optimal System Identification for NMR Applications**

### **9:30-10:30 Room: 102 Invited Talk**

*Hans-Andrea Loeliger,*  
**Factor Graphs, Least Squares and Kalman Filtering**

### **9:30-10:30 Room: 136 Invited Talk**

*Sjoerd Verduyn Lunel,*  
**Control and Stabilization of Systems with Time Delays**

## **Morning:**

### **Room: 102, Session: MA1**

*Chair:* Shmuel Friedland, Brian Marcus  
*Title:* **Capacity of Multi-Dimensional Codes Part I**

11:00-13:00 Minicourse on “Capacity of Multidimensional Codes”,  
*Shmuel Friedland*

### **Room: 126, Session: MA2**

*Chair:* Hidenori Kimura  
*Title:* **Control Applications**

11:00-11:20 **Cancer Treatment Using Multiple Chemotherapeutic Agents Subject to Drug Resistance,**

*John Westman, Bruce Fabijonas, Daniel Kern, Floyd Hanson*

11:25-11:45 **Selection of Decentralized Control Configurations Based on Disturbance Rejection for Plants with Real Integrators,**

*Henning Schmidt*

11:50-12:10 **Synergetic Control of the Unstable Two-Mass System,**  
*Alexander Kolesnikov*

12:15-12:35 **Synergetic Control for Electromechanical Systems,**

*Andrey Popov, Anatoly Kolesnikov, Gennady Veselov, Alexander Kolesnikov, Roger Dougal*

12:40-13:00 **Modeling of Out-of-Plane Hygroinstability of Multi-Ply Paperboard,**  
*Gianantonio Bortolin, Per Olof Gutman*

**Room: 136, Session: MA4**

*Chair:* Bill Helton, Andre Ran, Leiba Rodman

*Title:* **Matrix and Operator Equations I**

11:00-11:30 Noncanonical Almost Periodic Factorization and Toeplitz Operators with Almost Periodic Symbols,

*Leiba Rodman, I. M. Spitkovsky, H. J. Woerdeman*

11:30-12:00 **Symmetric Nonsquare Factorization of Selfadjoint Rational Matrix Functions and Algebraic Riccati Inequalities,**

*A. C. M. Ran, Mark A. Petersen*

12:00-12:30 Extremal Problems of Interpolation Theory,

*L. A. Sakhnovich*

12:30-13:00 **Convex Invertible Cones, Nevalinna-Pick Interpolation and the Set of Lyapunov Solutions,**

*Izchak Lewkowicz, Nir Cohen*

**Room: 208, Session: MA5**

*Chair:* Lorenzo Farina, Maria Elena Valcher

*Title:* **Positive Systems**

11:00-11:30 **Positive Systems in the State Space Approach: Main Issues and Recent Results,**  
*Lorenzo Farina*

11:30-12:00 **Positive Systems in the Behavioral Approach: Main Issues and Recent Results,**  
*Maria Elena Valcher*

12:00-12:30 **Feedback Stabilisation with Positive Control of Dissipative Compartmental Systems,**

*Georges Bastin, A. Provost*

12:30-13:00 **Feedback Control for a Chemostat with two Organisms,**

*Patrick De Leenheer, Hal Smith*

**Room: 209, Session: MA6**

*Chair:* Augusto Ferrante, Michele Pavon

*Title:* **Control of Quantum Mechanical Systems**

11:00-11:30 **Sufficient Conditions for Controllability of Finite Level Quantum Systems via Structure Theory of Semisimple Lie Algebras,**

*Claudio Altafini*

11:30-12:00 Geometric Control of Quantum Mechanical Systems in a Noisy Environment,  
*Domenico D'Alessandro*

12:00-12:30 **Control of Quantum Systems Using Model-based Feedback Strategies,**

*Augusto Ferrante, Michele Pavon, Giorgio Raccanelli*

12:30-13:00 **Quantum Control of Dissipative Systems,**

*Sonia G. Schirmer, A. I. Solomon*

**Room: 210, Session: MA7**

*Chair:* Peter Bauer

*Title:* **Adaptive Control**

11:00-11:20 **Gap Metric Robustness of Adaptive Controllers**,  
*Mark French*

11:20-11:40 **Adaptive Predictive Control with Controllers of Restricted Structure**,  
*Michael Grimble, Peter Martin*

11:40-12:00 **Output Adaptive Model Reference Control of Linear Continuous State-Delay Plant**,

*Boris Mirkin, Per-Olof Gutman*

12:00-12:20 **A Comparison Between Robust Adaptive Controllers w.r.t a Non-singular Transient Cost**,

*Ahmad Sanei, Mark French*

12:20-12:40 **A Manifold Structure on the set of Functional Observers**,

*Jochen Trumppf, Uwe Helmke*

## Middle:

**Room: 102, Session: MM1**

*Chair:* Shmuel Friedland, Brian Marcus

*Title:* **Capacity of Multi-Dimensional Codes Part II**

14:00-15:00 **On the Capacity of 2-D Constrained Codes and Consequences for Full-Surface Data Channels**,

*William Weeks*

15:00-16:00 **Counting Independent Sets in The Grid, And Similar Questions**

*Neil Calkin*

**Room: 126, Session: MM2**

*Chair:* Wei Lin

*Title:* **Nonlinear Systems and Control 1**

14:00-14:20 **Estimating Generalized Gradients of Value Function in Optimal Control Problems for Differential-Difference Inclusions**,

*Leonid Minchenko, Aleksey Volosevich*

14:20-14:40 **Interconnected Systems of Fliess Operators**,

*W. Steven Gray, Yaqin Li*

14:40-15:00 **Controllability Analysis of A Two Degree of Freedom Nonlinear Attitude Control System**,

*Jinglai Shen, Amit K. Sanyal, N. Harris McClamroch*

15:00-15:20 **Sliding Mode Idle Speed Ignition Control Strategies for Automotive Engines**,

*Manjit Singh Srari, H. Sindano, N. E. Gough, A. C. Cole*

15:20-15:40 **Truncation and Approximation Errors in the Max-Plus Algorithm for H-infinity Control**,

*William McEneaney*

15:40-16:00 **Solution of Second Order Linearization**,

*Rajagopalan Devanathan*

**Room: 129, Session: MM3**

*Chair:* Giorgio Picci, Augusto Ferrante

*Title:* **Stochastic Systems 1**

14:00-14:30 **Canonical Correlations Between Input and Output Processes of Linear Stochastic Models,**

*Katrien De Cock, Bart De Moor*

14:30-15:00 **A Regularized Cepstrum and Covariance Matching Method for ARMA(n,m) Design,**

*Per Enquist*

15:00-15:30 **On Some Interpolation Problems,**

*Gyorgy Michaletzky, A. Gombani*

15:30-16:00 **Non-regular Processes and Singular Kalman Filtering,**

*Augusto Ferrante, Stefano Pinzoni, Giorgio Picci*

**Room: 136, Session: MM4**

*Chair:* I. Gohberg, M.A. Kaashoek

*Title:* **State Space Methods for Problems in Operator Theory**

14:00-14:30 State Space Methods, Reproducing Kernel Spaces and Applications,

*Harry Dym*

14:30-15:00 A Beurling–Lax Type Theorem in the Unit Ball,

*Daniel Alpay, Aad Dijksma, Jim Rovnyak*

15:00-15:30 A Naimark Dilation Perspective on Positive Real Interpolation,

*A. Frazho*

15:30-16:00 State Space Method, Explicit Solutions of Scattering Problems, and Nonlinear Integrable Equations,

*Alexander L. Sakhnovich*

**Room: 208, Session: MM5**

*Chair:* Xiaochang Wang

*Title:* **Output Feedback Control of Linear Systems**

14:00-14:30 Counterexamples to Pole Placement by Real Static Output Feedback,

*Alex Eremenko, A. Gabrielov*

14:30-15:00 **Numerical Homotopy Algorithms for Satellite Trajectory Control by Pole Placement,**

*Jan Verschelde, Yusong Wang*

15:00-15:30 Numerical Schubert Calculus by the Pieri Homotopy Algorithm,

*Tien-Yien Li, Xiaoshen Wang, Mengnien Wu*

15:30-16:00 **On Minimal Order Decentralized Output Feedback Pole Assignment Problems,**

*Xiaochang Wang*

**Room: 209, Session: MM6**

*Chair:* Yutaka Yamamoto

*Title:* **Optimization and Optimal Control**

14:00-14:20 A Jacobi-like Method for the Indefinite Generalized Hermitian Eigenvalue Problem,

*Christian Mehl*

14:20-14:40 **Disturbed Discrete Time Linear-Quadratic Open-Loop Nash games** ,

*Gerhard Jank, Dirk Kremer*

14:40-15:00 **Linear Matrix Inequalities for Global Optimization of Rational Functions and H2 Optimal Model Reduction,**

*Dorina Jibeteau, Bernard Hanzon*

15:00-15:20 **Newton's Method for Optimization in Jordan Algebras,**

*Sandra Ricardo, Uwe Helmke, Shintaro Yoshizawa*

15:20-15:40 **Non-symmetric Riccati Theory and Linear Quadratic Nash Games.,**

*Dirk Kremer, Radu Stefan*

15:40-16:00 **Some New Results on Linear Quadratic Regulator Design for Lossless Systems,**

*Maria Gabriella Xibilia, Luigi Fortuna, Giovanni Muscato*

## **Afternoon:**

**Room: 102, Session: MP1**

*Chair: Sandro Zampieri*

*Title: The Interaction of Control, Information and Communication*

16:30-16:50 Minimum Data Rates for Stabilising Linear Systems with Unknown Parameters,  
*Girish Nair, Robin J. Evans, Björn Wittenmark*

16:50-17:10 A Graphical Model Approach to Distributed Control,

*Sekhar Tatikonda*

17:10-17:30 **Quantized Stabilization of Single-input Nonlinear Affine Systems,**

*Jialing Liu, Nicola Elia*

17:30-17:50 Distributed Robust Controller for Complex Networks,

*Wing Shing Wong*

17:50-18:10 **Stabilizing Quantized Feedback with Minimal Information Flow: the Scalar Case,**

*Fabio Fagnani, Sandro Zampieri*

18:10-18:30 Systems of Dynamics and their Cohomological Invariants,

*Reuben Rabi, Sanjoy Mitter*

**Room: 126, Session: MP2**

*Chair: Matthias Kawski*

*Title: Nonlinear Systems and Control 2*

16:30-16:50 **Skorokhod-Neumann Boundary Conditions in Robust Queueing Service Models,**  
*Martin Day*

16:50-17:10 **Optimization Methods for Target Problems of Control,**

*Alexander B. Kurzhanski, Pravin Varaiya*

17:10-17:30 **On Optimal Quadratic Lyapunov Functions for Polynomial Systems,**

*Graziano Chesi, Alberto Tesi, Antonio Vicino*

17:30-17:50 The Maximum Principle for an Optimal Solution to a Differential Inclusion with State Constraints,

*Aurelian Cernea*

17:50-18:10 **Synergetic Synthesis of Nonlinear Interconnected Control for Turbogenerators,**

*Anatoly Kolesnikov, Andrew Kuzmenko*

18:10-18:30 **Stabilities and Controllabilities of Switched Systems (with Applications to the Quantum Systems)**,  
*Leonid Gurvits*

**Room: 129, Session: MP3**

*Chair:* Amarjit Budhiraja

*Title:* **Stochastic Control and its Applications**

16:30-17:00 Nonlinear Filtering in Correlated Noise: a Wiener Chaos Approach,  
*Sergey Lototsky*

17:00-17:30 Stationary Solutions and Forward Equations for Controlled and Singular Martingale Problems,  
*Richard H. Stockbridge*

17:30-18:00 An Investment Model with Liquidity Risk,  
*Hui Wang*

18:00-18:30 **Mean-Variance Portfolio Selection under Markov Regime: Discrete-time Models and Continuous-time Limits**,  
*George Yin, X. Y. Zhou*

**Room: 136, Session: MP4**

*Chair:* Harry Dym, Heinz Langer

*Title:* **Spaces with Indefinite Metrics and Inverse**

16 :30-17:00 Regular and Singular Point-like Perturbations of some Differential Operators in Pontryagin Spaces,

*Aad Dijkma, Yuri Shondin, Nizhny Novgorod*

17:00-17:30 Applications of Spaces with Indefinite Metrics,  
*Babak Hassibi*

17:30-18:00 Sturm-Liouville Inverse Spectral Problems with Boundary Conditions Depending on the Spectral Parameter,

*Cornelis van der Mee, Vjacheslav Pivovarchik*

18:00-18:30 Variational Principles for Block Operator Matrices,  
*Christiane Tretter, Heinz Langer, Matthias Langer*

**Room: 209, Session: MP5**

*Chair:* Paul Fuhrmann

*Title:* **Algebraic Systems Theory**

16:30-16:50 **Further Results on Interconnection and Elimination for Delay-Differential Systems**,

*Heide Gluesing-Luerssen*

16:50-17:10 **Reduction of Affine Systems on Polytopes**,

*Jan H. van Schuppen, Luc C.G.J.M. Habets*

17:10-17:30 **State Feedback Stabilization with Guaranteed Transient Bounds**,

*Fabian Wirth, Diederich Hinrichsen, Elmar Plischke*

17:30-17:50 **Reduction of the Number of Parameters for all Stabilizing Controllers**,  
*Kazuyoshi Mori*

17:50-18:10 **Structural Properties of LTI Singular Systems by Output Feedback**,  
*Runyi Yu, Dianhui Wang*  
18:10-18:30 **On Fliess Models over a Commutative Ring**,  
*Vakhtang Lomadze*

**Room: 210, Session: MP6**

*Chair: Daniel Liberzon*

*Title: Hybrid Systems and Control*

16:30-17:00 **Nonlinear and Hybrid Control via RRTs**,

*Michael Branicky, Michael M. Curtiss*

17:00-17:30 **Reachability Analysis of Hybrid Systems with Linear Dynamics**,

*Mireille Broucke*

17:30-18:00 **Towards the Control of Linear Systems with Minimum Bit-Rate**,

*Joao Hespanha, Antonio Ortega, Lavanya Vasudevan*

18:00-18:30 **Control of Hybrid Systems along Limit Cycles**,

*Milos Zefran, Guobiao Song, Francesco Bullo*

## ***Tuesday August 13, 2002***

**8:00-9:00 Room: 101 Plenary Talk**

*Gilbert Strang,*

**Filtering and Signal Processing**

**9:00-10:00 Room: 101 Invited Talk**

*Arjan van der Schaft,*

**Mathematical Theory of Network Models of Physical Systems**

**9:00-10:00 Room: 102 Invited Talk**

*Robert J. McEliece,*

**Belief Propagation on Partially Ordered Sets**

**9:00-10:00 Room: 129 Invited Talk**

*Jeff Wood,*

**Modules and Behaviors: Re-examining Oberst's Duality**

## **Morning:**

**Room: 102, Session: TUA1**

*Chair: Heide Gluesing-Luerssen*

*Title: Design and Analysis of Block Codes, Part I*

10:30-11:30 **Iterative Decoding and Design of Codes on Graphs**,

*Pascal O. Vontobel*



11:30-12:00 Codes for Networks,

*Ralf Koetter*

12:00-12:30 **Unitary Constellation Design with Application to Space-time Coding,**

*Guangyue Han, Joachim Rosenthal*

**Room: 126, Session: TUA2**

*Chair:* Wijesuriya P. Dayawansa

*Title:* **Patterns in Biology**

10:30-11:00 Visual Systems,

*Bijoy Gosh, A. Polpitiya*

11:00-11:30 The Dynamics of Avian Kinesis,

*Lawrence Schovanec, Alan Barhorst, Sankar Chatterjee*

11:30-12:00 Spiral Waves in the Heart,

*Clyde Martin, P. Marcus*

12:00-12:30 Large Amplitude Travelling Waves in Coupled Oscillator Networks,

*Wijesura P. Dayawansa, Clyde Martin*

**Room: 129, Session: TUA3**

*Chair:* Victor Vinnikov, Joseph A. Ball

*Title:* **Minicourse A: Multidimensional Systems**

10:30-11:30 Overdetermined Multidimensional Systems and Applications,

*Victor Vinnikov*

11:30-12:30 Overdetermined Multidimensional Systems and Applications,

*Joseph A. Ball*

**Room: 136, Session: TUA4**

*Chair:* Lars Gruene, Fabian Wirth

*Title:* **Input-to-State Stability, Part I**

10:30-11:00 **Attractors, Input-to-State-Stability, and Control Sets,**

*Fritz Colonius, W. Kliemann*

11:00-11:30 **Output-Input Stability of Nonlinear Systems and Input/Output Operators,**

*Daniel Liberzon, Eduardo Sontag*

11:30-12:00 **A Parameter-Robust Observer as an Application of ISS Techniques,**

*Madalena Chaves*

12:00-12:30 **Quantitative Aspects of the Input-to-state Stability Property,**

*Lars Gruene*

**Room: 208, Session: TUA5**

*Chair:* Anders Rantzer

*Title:* **Linear Systems**

10:30-10:50 **A New Property of Laguerre Functions,**

*Luigi Fortuna, Riccardo Caponetto, Mattia Frasca*

10:50-11:10 **Communication-Limited Stabilisability of Jump Markov Linear Systems**,  
*Girish Nair, Subhrakanti Dey, Robin Evans*  
11:10-11:30 **Equivalence of Finite Pole Assignability of LTI Singular Systems by Output Feedback**,  
*Runyi Yu, Dianhui Wang*  
11:30-11:50 **On Kalman Models over a Commutative Ring**,  
*Vakhtang Lomadze*  
11:50-12:10 **On Rosenbrock Models over a Commutative Ring**,  
*Vakhtang Lomadze*  
12:10-12:30 **Inclusion of Frequency Domain Behaviors**,  
*Stephen Prajna, Pablo A. Parrilo*

**Room: 209, Session: TUA6**

*Chair:* Viswanath Ramakrishna  
*Title:* **Quantum Engineering I**

10:30-11:10 **A Numerical Approach to the Design of Strongly Modulating Pulses to Implement Precise Effective Hamiltonians for Quantum Information Processing**,  
*Timothy Havel, Nicolas Boulant, David G. Cory, Evan M. Fortunato, Marco A. Pravia, Grum Teklemariam*  
11:10-11:50 **System Theoretic Aspects of NMR Spectroscopy**,  
*Raimund J. Ober*  
11:50-12:10 **Local and Global Control of Population Transfer in Quantum Systems**,  
*Vladimir Malinovsky*  
12:10-12:30 **Hartree-Fock Models in Electronic Structure Computations**,  
*Gabriel Turinici*

**Room: 210, Session: TUA7**

*Chair:* Stephen Campbell, Ramine Nikoukhah  
*Title:* **Robust Estimation, Identification, and Detection**

10:30-11:00 **A Survey of Input-Output Methods in Robust Estimation**,  
*Babak Hassibi*  
11:00-11:30 **Robust Least-Squares Filtering with a Relative Entropy Constraint**,  
*Bernard Levy, Ramine Nikoukhah*  
11:30-12:00 **Bounding the Solution Set of Uncertain Linear Equations: a Convex Relaxation Approach**,  
*Giuseppe Calafiore, Laurent El Ghaoui*  
12:00-12:30 **The Design of Auxiliary Signals for Robust Active Failure Detection in Uncertain Systems**,  
*Stephen Campbell, Ramine Nikoukhah*

## Middle:

**Room: 102, Session: TUM1**

*Chair:* Daniel Costello  
*Title:* **Design and Analysis of Block Codes, Part II**

14:00-14:30 On a Few Classes of Optimal and Near-optimal Polynomial Codes,  
*Nuh Aydin*  
14:30-15:00 Analysis of Iterative Decoding Algorithms,  
*Michael O'Sullivan, Marcus Greferath, Roxana Smarandache*  
15:00-15:30 On Plotkin and Elias Bounds for Codes over Frobenius Rings under the Homogeneous Weight,  
*Marcus Greferath*  
15:30-16:00 **Four and Six-Dimensional Signal Constellations from Algebraic Lattices**,  
*Carmelo Interlando, Michele Elia*

**Room: 126, Session: TUM2**

*Chair:* Raimund Ober

*Title:* **Immunology I: Introduction and Microscopy**

14:00-14:40 Introduction to Workshop and Overview,  
*Raimund Ober*  
14:40-15:20 T Cell Receptor MHC Interactions: An Overview,  
*E. Sally Ward*  
15:20-16:00 Image Formation and Deconvolution for 3 Dimensional Microscopy of Cell Samples,  
*Jose Angel Conchello*

**Room: 129, Session: TUM3**

*Chair:* Krzysztof Galkowski, Eric Rogers, Victor Vinnikov

*Title:* **Multi-dimensional Systems 1**

14:00-15:00 **2D Linear Control Systems - From Theory to Experiment to Theory**,  
*Eric Rogers, Tarek Al-Towlem, James Radcliffe, Paul Lewin, Krzysztof Galkowski, David Owens*  
15:00-15:30 **Stability Analysis of 2D Dynamics in Roessers Model**,  
*Tatsushi Ooba, Yasuyuki Funahashi*  
15:30-16:00 **Algebraic Algorithm for 2D Stability Test Based on a Lyapunov Equation**,  
*Minoru Yamada, Li Xu, Osami Saito*

**Room: 208, Session: TUM4**

*Chair:* Joseph A. Ball, Hugo Woerdeman

*Title:* **Recent Developments on Interpolation and Completion Problems**

14:00-14:20 **Feedback Control for Multidimensional Systems and Interpolation Problems for Multivariable Functions**,  
*Joseph A. Ball, Tanit Malakorn*  
14:20-14:40 On the Caratheodory-Fejer Interpolation Problem for Generalized Schur Functions,  
*Vladimir Bolotnikov*  
14:40-15:00 Abstract Interpolation in Scattering Setting,  
*Alexander Kheifets*  
15:00-15:20 A Convex Optimization Approach to Generalized Moment Problems,

*Anders Lindquist, C. I. Byrnes*  
15:20-15:40 Extremal Properties of Outer Factors,  
*Scott McCullough*  
15:40-16:00 **On the Realization of Inverse Stieltjes Functions,**  
*E. R. Tsekanovskii, Sergey Belyi, Seppo Hassi, Henk de Snoo*

**Room: 209, Session: TUM5**

*Chair: Damir Arov*

*Title: Control of Distributed Parameter Systems*

14:00-14:30 **Optimal Control and Riccati Equations for a Degenerate Parabolic System,**  
*Jean-Marie Buchot, Jean-Pierre Raymond*

14:30-15:00 Nonlinear Predictive Control of Flexible Manipulator Systems,  
*Alaa Mohamedy, Andrzej Ordys, Michael Grimble*

15:00-15:30 Furtivity and Masking Problems in Acoustics,  
*Francesco Zirilli*

15:30-16:00 **Approximation of Optimal Controls for Semi-Linear Parabolic PDE by Solving Hamilton-Jacobi-Bellman Equations,**  
*Sophie Gombao*

**Room: 210, Session: TUM6**

*Chair: Anders Lindquist*

*Title: Filtering and Identification*

14:00-14:20 **Identification of Nonlinear Dynamic Systems with Multiple Inputs and Single Output Using Discrete-Time Volterra Type Equations,**  
*Thomas Treichl, Stefan Hofmann, Dierk Schröder*

14:25-14:45 **Data Driven Local Coordinates,**  
*Thomas Ribarits, Manfred Deistler, Bernard Hanzon*

14:50-15:10 **Using Rank Order Filters to Decompose the Electromyogram,**  
*Dawnlee Roberson, Cheryl Schrader*

15:15-15:35 **Conditioning Analysis of a Continuous Time Subspace-Based Model Identification Algorithm,**

*Juan Carlos Martinez-Garcia, G.H. Salazar-Silva, R. Garrido*

15:40-16:00 On Model and State Estimation under Mixed Uncertainty,  
*Irina Digailova, Alexander B.Kurzhanski*

**Afternoon:**

**Room: 102, Session: TUP1**

*Chair: Heide Gluesing-Luerssen*

*Title: Convolutional Codes*

16:30-17:00 **Construction and Decoding of Strongly MDS Convolutional Codes,**  
*Roxana Smarandache, Heide Gluesing-Luerssen, Joachim Rosenthal*

17:00-17:30 **On Observers and Behaviors,**  
*Paul A. Fuhrmann*

17:30-18:00 **On the Convergence of Nonsystematic Turbo Codes**,  
*Daniel Costello Jr., Adrish Banerjee, Francesca Vatta, Bartolo Scanavino*  
18:00-18:30 **Some Small Cyclic Convolutional Codes**,  
*Heide Gluesing-Luerssen, Wiland Schmale, Melissa Striha*  
18:30-18:50 **Some Properties of Linear Recurrent Error Control Codes: A Module-Theoretic Approach**,  
*Michel Fliess*

**Room: 126, Session: TUP2**

*Chair:* Raimund Ober

*Title:* **Immunology II: Microscopy and Biophysics**

16:30-17:10 Microscopic Investigation of Synapse Formation,  
*Michael Dustin*

17:10-17:50 Studying Protein-Protein Interactions: Biosensor Technology,  
*Peter Schuck*

17:50-18:30 Protein Dynamics near Membrane Surfaces: New Aspects of Local Coupled Reaction and Transport,  
*Nancy L. Thompson*

**Room: 129, Session: TUP3**

*Chair:* Krzysztof Galkowski, Eric Rogers, Victor Vinnikov

*Title:* **Multi-dimensional Systems 2**

16:30-17:00 State Representation of nD Behaviors,  
*Paula Rocha*

17:00-17:30 **The Bang-Bang Principle for the Goursat-Darboux Problem**,  
*Dariusz Idczak*

17:30-18:00 Elimination of Anticipation of Singular 2D Roesser Model,  
*Tadeusz Kaczorek*

18:00-18:30 **Difference Equations and n-D Discrete Systems**,  
*Jiri Gregor*

**Room: 136, Session: TUP4**

*Chair:* Matthias Kawski

*Title:* **Nonlinear Systems and Control 3**

16:30-16:50 **Disturbance Attenuation for a Class of Nonlinear Systems by Output Feedback**,  
*Wei Lin, Xianqing Huang, Chunjiang Qian*

16:50-17:10 **A Linear Controller for a Multifrequency Model of a Pulse-Width-Modulated Cuk Converter**,

*Yusuf Fuad, J.W. van der Woude, W.L. de Koning*

17:10-17:30 **Synergetic Synthesis of Nonlinear Kinematics Regulators for Mobile Robots**,  
*Boris Topchiev*

17:30-17:50 **On the Convergence of a Feedback Control Strategy for Multilevel Quantum Systems**,

*Paolo Vettori*

18:10-18:30 Global Output Feedback Control with Disturbance Attenuation for a Class of Nonlinear Systems,  
*Xianqing Huang, Wei Lin*

**Room: 209, Session: TUP5**

*Chair:* Ruth Curtain

*Title:* **Infinite Dimensional Systems**

16:30-17:00 **Observability Analysis of a Nonlinear Tubular Reactor**,  
*Cedric Delattre, Denis Dochain, Joseph Winkin*

17:00-17:30 **A Hilbert Space Approach to Self-Similar Systems**,  
*Mamadou Mboup*

17:30-18:00 **Boundary Observability in the Quasi-Static Thermoelastic Contact Problem**,  
*Michael Polis, Irina Siverguina*

18:00-18:30 **Modeling Distributed Parameter Systems with Discrete Element Networks**,  
*Fabien Soulier, Patrick Lagonotte*

**Room: 210, Session: TUP6**

*Chair:* Avraham Feintuch

*Title:* **Robust and H-Infinity Control and Estimation**

16:30-16:50 **Simultaneous Robust Regulation and Robust Stabilization with Degree Constraint**,

*Ryozo Nagamune*

16:50-17:10 **Closed-Loop Structure of Discrete Time H-infinity Controller**,  
*Waree Kongprawechnon, Shun Ushida, Hidenori Kimura*

17:10-17:30 **On a Recursive State-space Method for Discrete-time  $H_2$ -Approximation**,  
*Ralf Peeters, Martine Olivi, Bernard Hanzon*

17:30-17:50 **PID Robust Control via Genetic Algorithms and Integral Criteria Minimization**,  
*Catalin Nicolae Calistru, Oana Geman*

17:50-18:10 **MIMO Systems Properties Preservation under SPR Substitutions**,  
*Juan Carlos Martinez-Garcia, G. Fernández-Anaya*

18:10-18:30 **State Feedback Mixed  $H_2/H$ -Infinity Problem for Linear Systems with Finite Jumps**,

*Vasile Dragan, Adrian Stoica*

## ***Wednesday August 14, 2002***

**8:00-9:00 Room: 101 Plenary Talk**

*J. William Helton,*

**Manipulating Matrix Inequalities Automatically**

**9:00-10:00 Room: 101 Invited Talk**

*Jan C. Willems,*

**Dissipative Distributed Systems**

**9:00-10:00 Room: 102 Invited Talk**

*Albert-Laszlo Barabasi,*  
**The Architecture of Complexity: Emergence of Scaling in Complex Networks**

**9:00-10:00 Room: 136 Invited Talk**

*Knut Hueper,*  
**The Dynamics of Matrix Eigenvalue Algorithms**

**Morning:**

**Room: 102, Session: WA1**

*Chair:* Raimund Ober  
*Title:* **Immunology 3: Structure and Kinetics**

10:30-11:10 Geometrical Methods in Structural Molecular Biology,  
*Timothy F. Havel*

11:10-11:50 Kinetic aspects of TcR-MHC and Antibody-Antigen Interactions,  
*Jefferson Foote*

11:50-12:30 Biophysical Considerations of T-Cell Receptor-Peptide/MHC Interactions,  
*Brian M. Baker*

**Room: 126, Session: WA2**

*Chair:* Martin Haenggi  
*Title:* **Computer Networks**

10:30-10:50 **Min-Plus System Theory Applied to Communication Networks,**  
*Patrick Thiran , Jean-Yves Le Boudec*

10:55-11:15 **Elements of Probabilistic Network Calculus for Packet Scale Rate Guarantee Nodes,**  
*Milan Vojnovic , Jean-Yves Le Boudec*

11:20-11:40 **Statistical Performance Analysis of a Generalized Processor Sharing System by Using Large Deviations,**  
*Min Xie, Martin Haenggi*

11:45-12:05 **Resource Allocation and Congestion Control in Distributed Sensor Networks - a Network Calculus Approach,**  
*Jinsong Zhang, Kamal Premaratne, Peter Bauer*

12:10-12:30 **Optimal Media Streaming in a Rate-Distortion Sense For Guaranteed Service Networks,**  
*Olivier Verscheure, Pascal Frossard*

**Room: 129, Session: WA3**

*Chair:* Eric Rogers  
*Title:* **Minicourse B: Multidimensional Systems**

10:30-11:10 Recent Results on Multidimensional Behaviors,  
*Eva Zerz*

11:10-11:50 Motivation and General Concepts in Behavioral Systems,

*Jan C. Willems*

11:50-12:30 Similarities/Differences Between the Behavioral Approach for Multidimensional Versus Delay-differential Systems,  
*Heide Gluesing-Luerssen*

**Room: 136, Session: WA4**

*Chair:* Paul Van Dooren

*Title:* **Model Reduction**

10:30-10:50 An Overview of Model Reduction Methods for Large-Scale Dynamical Systems,  
*Thanos Antoulas*

10:50-11:10 Analysis of Smith-Type Methods for Lyapunov Equations and Balanced Model Reduction,

*Dan Sorensen*

11:10-11:30 **Krylov Subspace Techniques for Reduced Order Modeling of Nonlinear Dynamical System,**

*Daniel Skoogh, Zhaojun Bai*

11:30-11:50 **Model Reduction of Second Order Systems,**

*Younes Chahlaoui, D. Lemonnier, K. Meerbergen, A. Vandendorpe, P. Van Dooren*

11:50-12:10 **Model Reduction via Tangential Interpolation,**

*Antoine Vandendorpe, K. Gallivan, P. Van Dooren*

12:10-12:30 Approximation of the Logarithmic Derivative of Half-Order Hankel Functions,  
*Jing-Rebecca Li*

**Room: 208, Session: WA5**

*Chair:* Daniel Alpay, Yuli Eidelman

*Title:* **Time-Varying Systems and Numerical Problems**

10:30-11:00 Unbounded J-inner Sections,

*Patrick Dewilde, Daniel Alpay*

11:00-11:30 **Linear Time-Varying Darlington Synthesis,**

*Avraham Feintuch*

11:30-12:00 Reduction to System Methods for Inversion of Diagonal Plus Semiseparable Operator Matrices,

*Yuli Eidelman, Israel Gohberg*

**Room: 209, Session: WA6**

*Chair:* Erik Verriest

*Title:* **Nonlinear Systems and Control 4**

10:30-11:00 **Parameter Tuning of a Non Integer Order PID Controller,**

*Luigi Fortuna, Riccardo Caponetto, Domenico Porto*

11:00-11:30 **Nonlinear Discrete-Time Observer Design with Linearizable Error Dynamics,**

*MingQing Xiao, Nikolaos Kazantzis, Costas Kravaris, Arthur J Krener*

11:30-12:00 **Analysis of Periodic Solutions of Tapping-Mode AFM: An IQC Approach,**

*Murti Salapaka, Abu Sebastian*

12:00-12:30 **Bifurcations of the Controlled Escape Equation,**



*Tobias Gayer*

**Room: 210, Session: WA7**

*Chair: Rodolphe Sepulchre*

*Title: Discrete Event and Hybrid Systems*

10:30-10:50 **Switched Systems that are Periodically Stable may be Unstable**,  
*Jacques Theys, Vincent Blondel, Alexander Vladimirov*

10:50-11:10 **The Servo Problem for Piecewise Linear Systems**,  
*Stefan Solyom, Anders Rantzer*

11:10-11:30 **Stability of Hybrid Control Systems Based on Time-State Control Forms**,  
*Yoshikatsu Hoshi, Mitsuji Sampei, Shigeki Nakaura,*

11:30-11:50 **Discrete-Time Modeling and Analysis of Pulse-Width-Modulated Switched Power Converters**,  
*Willem L. De Koning*

11:50-12:10 **On the Control of the Resonant Converter: A Hybrid-Flatness Approach**,  
*Hebert Sira-Ramirez, Ramon Silva-Ortigoza*

12:10-12:30 **Controllability of Periodically Switched Linear Systems with Delay in Control**,  
*Guangming Xie, Long Wang, Yijing Wang*

## Middle:

**Room: 102, Session: WM1**

*Chair: Raimund Ober*

*Title: Immunology 4: Diffusion and Modelling*

14:00-14:40 **Measuring Lateral Diffusion and Associations of MHC Molecules in Membranes of the ER and at the Cell Surface**,  
*Michael Edidin*

14:40-15:20 **A Computational Model for T Cell Receptor Signal Integration**,  
*Mark Alber, Arancha Casal, Cenk Sumen, Tim Reddy, Mark Davis, Peter Lee*

15:20-16:00 **Immunological Synapse Formation: A Crossroad of Physical Chemistry and Cell Biology**,  
*Arup K. Chakraborty*

**Room: 126, Session: WM2**

*Chair: Aleksandar Kavcic*

*Title: Control and Communications*

14:00-14:20 **Feedback Capacity**,  
*Sekhar Tatikonda, Sanjoy Mitter*

14:20-14:40 **Sum-Product Algorithm and Feedback Capacity**,  
*Shaohua Yang, Aleksandar Kavcic*

14:40-15:00 **Kalman Filtering, Factor Graphs, and Electrical Networks**,  
*Pascal O. Vontobel, Dani Lippuner, Hans-Andrea Loeliger*

15:00-15:20 **Kalman Filtering Applied to Timing Recovery in Tracking Mode**,  
*Panu Chaichanavong, Brian Marcus*

15:20-15:40 **Lower Bounds for the Performance of Iterative Timing Recovery at low SNR**,  
*Aravind Nayak, J. Barry, S. McLaughlin*  
15:40-16:00 Classical Capacity of Quantum Channels,  
*Navin Khaneja*

**Room: 129, Session: WM3**

*Chair:* Krzysztof Galkowski, Eric Rogers, Victor Vinnikov  
*Title:* **Multi-dimensional Systems 3**

14:00-15:00 Conservative Multidimensional Systems: A Survey,  
*Joseph A. Ball*  
15:00-15:30 On  $J$ -Conservative Scattering  $nD$  System Realizations,  
*Dmitry Kalyuzhniy-Verbovetzky*  
15:30-16:00 **Factorization of M-D Polynomial Matrices for Design of M-D Multirate Systems**,  
*Mikhail Tchobanou, Cynthia Woodburn*

**Room: 136, Session: WM4**

*Chair:* Uwe Helmke  
*Title:* **Control and Computation**

14:00-14:30 Continuation of Eigendecompositions ,  
*Luca Dieci*  
14:30-5:00 Numerical Solution of Euclidean Balanced Norm Realizations via Gradient Flows,  
*N. Del Buono, L. Lopez*  
15:00-15:30 **Controllability of the QR Algorithm on Hessenberg Flags**,  
*Uwe Helmke, Jens Jordan*  
15:30-16:00 **The Continuous-Time Rayleigh Quotient Flow on the Grassmann Manifold**,  
*Rodolphe Sepulchre, P.-A. Absil, R. Mahony*

**Room: 209, Session: WM5**

*Chair:* Anthony Bloch  
*Title:* **Algebraic and Differential Geometry in Systems Theory**

14:00-14:20 **Hamiltonian Structure of the Algebraic Riccati Equation and its Infinitesimal V-Stability**,  
*Nanaz Fathpour, Edmond A. Jonckheere*  
14:20-14:40 Global Transformation of Nonlinear Dynamic Systems into Canonical Forms,  
*Anna Michtchenko, Aleksey Zhirabok*  
14:40-15:00 **A Lie-Group Approach for Nonlinear Dynamic Systems Described by Implicit Ordinary Differential Equations**,  
*Kurt Schlacher, Andreas Kugi, Kurt Zehetleitner*  
15:00-15:20 **Quotients of Fully Nonlinear Control Systems**,  
*Paulo Tabuada, George J. Pappas*  
15:20-15:40 **The Wave Equation as a Port-Hamiltonian System, and a Finite Dimensional Approximation**,  
*Viswanath Talasila, Goran Golo, Arjan van der Schaft*  
15:40-16:00 **Pseudo Balancing for Discrete Nonlinear Systems**,

*Erik Verriest*

**Room: 210, Session: WM6**

*Chair:* Panos Antsaklis, Anthony Michel

*Title:* **Hybrid Control System Analysis, Synthesis and Diagnosis**

14:00-14:30 **Partial Stability of Dynamical Systems,**

*Ye Sun, A.N. Michel, A.P. Molchanov*

14:30-15:00 **An Approach to General Switched Linear Quadratic Optimal Control Problems with State Jumps,**

*Xuping Xu , Panos Antsaklis*

15:00-15:30 **The Controlled Composition Analysis of Hybrid Automata,**

*Ying Shang, M.D. Lemmon*

15:30-16:00 **Monitoring and Diagnosis of Hybrid Systems Using Particle Filtering Methods,**

*Xenofon Koutsoukos, James Kurien, Feng Zhao*

**Room: 208, Session: WM7**

*Chair:* Giorgio Picci

*Title:* **Stochastic Systems 2**

14:00-14:30 State Space Realization of Random Processes with Feedback,

*Giorgio Picci, Alessandro Chiuso*

14:30-15:00 Approximate Realization of Hidden Markov Chains,

*Lorenzo Finesso*

15:00-15:30 **Random Sampling of a Continuous-Time Stochastic Dynamical System,**

*Mario Micheli, Michael I. Jordan*

15:30-16:00 The Hilbert Space of an Ergodic Sequence,

*Giorgio Picci*

**Afternoon:**

**Room: 102, Session: WP1**

*Chair:* Raimund Ober

*Title:* **Immunology 5: Cellular Aspects**

16:30-17:30 Staining Antigen Specific CD4+ T -Cells with Class II MHC Oligomers,

*Lawrence Stern*

17:10-17:40 **The Roles of Serial Engagement and Kinetic Proofreading in Peptide-Induced T-Cell Activation,**

*Dan Coombs, Carla Wofsy, Byron Goldstein*

**Room: 126, Session: WP2**

*Chair:* Roxana Smarandache

*Title:* **Cryptography**

16:30-17:00 **A High-Speed Processing for RSA Cryptograms Using High-Radix Signed-Digit**

Numbers and a New Algorithm of Modulo Operation,  
*Yoshinori Fujisawa, Yasushi Fuwa*  
17:00-17:30 **On the Rational Cubic Curve Cryptosystems,**  
*Xiaochang Wang, Heather Henkel*  
17:30-18:00 **Public Key Cryptography Based on Simple Modules over Simple Rings,**  
*Gerard Maze, Christopher Monico, Joan-Josep Climent, Joachim Rosenthal*

**Room: 129, Session: WP3**

*Chair:* Krzysztof Galkowski, Eric Rogers, Victor Vinnikov  
*Title:* **Multi-dimensional Systems 4**

16:30-17:00 **Spatial Restoration with Reduced Boundary Error,**  
*Nirmal Bose, Jaehoon Koo*  
17:00-17:30 **On Successive Packing Approach to Multidimensional (M-D) Interleaving,**  
*Sankar Basu, Xi Min Zhang, Yun Q. Shi*  
17:30-18:00 **Matrix Functions in Homomorphic Signal Processing,**  
*Eduard Krajník*  
18:00-18:30 **Cellular Automata in Image Processing,**  
*Adriana Popovici, Dan Emanuel Popovici*

**Room: 136, Session: WP4**

*Chair:* Biswa Nath Datta, Floyd B. Hanson  
*Title:* **Large-Scale Computations in Control**

16:30-16:50 Projection Methods for Reduced Order Modeling with Guaranteed Stability,  
*Thanos Antoulas*  
16:55-17:15 **Computational Methods for Portfolio and Consumption Policy Optimization in Log-Normal Diffusion, Log-Uniform Jump Environments,**  
*Floyd B. Hanson, J. J. Westman*  
17:20-17:40 **Partial Eigenvalue Assignment in Linear Systems: Existence, Uniqueness and Numerical Solution,**  
*Biswa N. Datta, Daniil Sarkissian*  
17:45-18:05 **Model Reduction via an Explicitly Restarted Lanczos Algorithm,**  
*Vasilios Papakos, Imad M. Jaimoukha*

**Room: 208, Session: WP5**

*Chair:* J. William Helton  
*Title:* **Expressing Polynomials as Sums of Squares Together with Applications**

16:30-17:10 How to Write a Polynomial as a Sum of Squares of Polynomials, and Why You'd Want to Do So,  
*Bruce Reznick*  
17:10-17:30 Applications of Our Newfound Facility in Expressing Polynomials as Sums of Squares.,  
*Pablo A. Parrilo*  
17:30-17:50 Reduced Representations of Positive Polynomials,  
*Mihai Putinar*

17:50-18:10 Recent Progress in Polynomial Optimization,  
*Ruchira Datta*

18:10-18:30 **Geometry, Moments and Semidefinite Optimization**,  
*Constantine Caramanis, Dimitris Bertsimas*

**Room: 209, Session: WP6**

*Chair:* Viswanath Ramakrishna  
*Title:* **Quantum Engineering II**

16:30-17:10 Optimal Control of Laser Cooling: A Theory of Purity Increasing Transformations,

*David Tannor, Shlomo Sklarz*

17:10-17:30 **Controllability of Pairs of Coupled Quantum Dots** ,  
*Viswanath Ramakrishna*

17:30-17:50 **Geometric Control for Quantum Systems**,  
*Sonia Schirmer, A.D. Greentree*

17:50-18:10 **Use of Wei-Norman Formulae and Parameter Differentiation in Quantum Control** ,

*Claudio Altafini*

18:10-18:30 Control of Quantum Mechanical Systems with Minimum Number of Switches,  
*Domenico D' Alessandro*

## ***Thursday August 15, 2002***

### **8:00-9:00 Room: 101 Plenary Talk**

*Eduardo Sontag,*  
**On Systems Molecular Biology and Control Theory**

### **9:00-10:00 Room: 126 Invited Talk**

*Olof Staffans,*  
**Passive and Conservative Infinite-Dimensional Impedance and Scattering Systems (from a Personal Point of View)**

### **9:00-10:00 Room: 129 Invited Talk**

*Wolfgang J. Runggaldier,*  
**On Stochastic Control in Finance**

### **9:00-10:00 Room: 136 Invited Talk**

*Matthias Heinkenschloss,*  
**Domain Decomposition Approaches for the Optimization of Distributed Systems**

## Morning:

### Room: 102, Session: THA1

*Chair:* Mark Alber

*Title:* **Complex Networks and Biological Applications 1**

10:30-11:10 The Spread of Infections on Social Networks,  
*Mark Newman*

11:10-11:50 Information Theory Aspects of Signal Transduction and Gene Regulation,  
*Andrea Levchenko*

### Room: 126, Session: THA2

*Chair:* Ruth Curtain, Olof Staffans

*Title:* **Distributed Parameter Systems: Theory Part I**

10:30-10:50 Some Results on the Theory of Linear Time-Invariant Dissipative Systems with Hilbert and Pontryagin State Spaces,

*Damir Arov*

10:55-11:15 **Explicit Formulae for J-Spectral Factors for Well-Posed Systems,**

*Ruth Curtain, Amol J. Sasane*

11:20-11:40 **A Riccati Equation Approach to the Standard Infinite-Dimensional H-Infinity Problem,**

*Kalle M. Mikkola, Olof Staffans*

11:45-12:05 **Sub-optimal Hankel Norm Approximation for the Wiener Class,**  
*Orest Iftime, Amol Sasane*

12:10-12:30 **LQG Balancing in Infinite Dimensions,**

*Mark R. Opmeer, Ruth Curtain*

### Room: 129, Session: THA3

*Chair:* J.M. (Hans) Schumacher

*Title:* **Systems and Control Theory in Finance and Insurance 1**

10:30-11:30 Control and Financial Engineering,

*J. M. (Hans) Schumacher*

11:30-12:00 Dynamic Risk Sensitive Asset Management With Nonnegative Multiple Factor Constraints,

*Arunabha Bagchi, K. Suresh Kumar*

12:00-12:30 **A Filtered No-arbitrage Model for Term Structures from Noisy Data,**

*Andrea Gombani, Stefan R. Jaschke, Wolfgang J. Runggaldier*

### Room: 136, Session: THA4

*Chair:* David Nicholls

*Title:* **Fully Nonlinear, Three-Dimensional, Surface Water Waves in Arbitrary Depth**

10:30-11:00 Experiments on Deep-Water Waves with Two-Dimensional Surface Patterns,  
*Diane Henderson*

11:00-11:30 Instability of Bounded Solutions of the 2-D Cubic Nonlinear Schrodinger Equation,

*John Carter*

11:30-12:00 Computing (quasi) Periodic Waves in Shallow Water,

*Bernard Deconinck*

12:30-13:00 ,

*Harvey Segur*

**Room: 208, Session: THA5**

*Chair:* Krzysztof Galkowski, Eric Rogers, Victor Vinnikov

*Title:* **Multi-dimensional Systems 5**

10:30-11:00 **Robust Stability and Stabilization of n-D Systems,**

*Jiang-Qian Ying, Li Xu, Masayuki Kawamata*

11:00-11:30 **Successive stabilization of a class of 2D systems,**

*Krzysztof Galkowski, Bartek Sulikowski, Eric Rogers, David H. Owens*

11:30-12:00 **Optimal Control for a Class of Differential Linear Repetitive Processes,**

*Eric Rogers, S. Dymkov, M. Dymkov, K. Galkowski, D. H Owens*

12:00-12:30 **Relation between Eigenvalues and Singular Values in the Problem of Stability Maintenance of Ellipsoidal Estimates,**

*Taalalibek A. Akunov, Anatoly V. Ushakov*

**Room: 209, Session: THA6**

*Chair:* Koichi Hashimoto

*Title:* **Globally Stable Robust Visual Servoing**

10:30-11:00 **Keeping Features in the Camera's Field of View: a Visual Servoing Strategy,**

*Graziano Chesi, K. Hashimoto, D. Prattichizzo, A. Vicino*

11:00-11:30 **Binocular Visual Servoing with a Limited Field of View,**

*Noah Cowan*

11:30-12:00 Visual Servoing with Dynamics: Control of an Unmanned Blimp,

*Jim Ostrowski*

12:00-12:30 Enlarging the Stable Region of Image Based Control by Path Planning,

*Youcef Mezouar*

**Room: 210, Session: THA7**

*Chair:* Bill Helton, Andre Ran, Leiba Rodman

*Title:* **Matrix and Operator Equations II**

10:30-11:00 Noncommutative Convexity of Functions and Sets,

*J. William Helton*

11:00-11:30 Symmetry Groups, Semidefinite Programming, and Sums of Squares,

*Pablo A. Parrilo*

11:30-12:00 The Symmetric Linear Matrix Equation,

*Martine C. B. Reurings*

12:00-12:30 **Investigating Duality on Stability Conditions,**

*Mauricio de Oliveira*

## Middle:

**Room: 102, Session: THM1**

*Chair:* Mark Alber

*Title:* **Complex Networks and Biological Applications 2**

14:00-14:40 Synchronization of Oscillators in Small World Systems,

*Lou Pecora*

14:40-15:20 Intracellular signaling is dependent on the cytoskeleton. Evidence from proteomics.,

*Gabor Forgas*

15:20-16:00 The Role of Scale-free Connectivity Patterns in Spreading Phenomena,

*Alessandro Vespignani*

**Room: 126, Session: THM2**

*Chair:* Ruth Curtain, Olof Staffans

*Title:* **Distributed Parameter Systems: Theory Part II**

14:00-14:30 **Zeros of SISO Infinite-Dimensional Systems,**

*Kirsten Morris, Richard Rebarber*

14:30-15:00 **Stabilizability of Systems with Signals in  $\ell_2(\mathbb{Z})$ ,**

*Birgit Jacob*

15:00-15:30 **Stability and Boundedness of Continuous and Discrete-Time Systems,**

*Hans Zwart, B.Z. Guo*

15:30-16:00 **Coprime Conditions for Pseudorational Transfer Functions,**

*Yutaka Yamamoto*

**Room: 129, Session: THM3**

*Chair:* J.M. (Hans) Schumacher

*Title:* **Systems and Control Theory in Finance and Insurance 2**

14:00-15:00 Ruin Probabilities Minimization and Dividend Distribution Optimization in Diffusion Models,

*Michael Taksar*

15:00-15:30 Continuous-Time Mean-Variance Portfolio Selection with Markov-Modulated Market Parameters,

*Xun Yu Zhou*

15:30-16:00 **Stock Selection Based on Cluster and Outlier Analysis,**

*Steven Craighead, Bruce Klemesrud*

**Room: 136, Session: THM4**

*Chair:* Paul Van Dooren

*Title:* **Robust Control and Linear Matrix Inequalities**



14:00-14:30 **Linear Matrix Inequalities in Robust Control: A Brief Survey**,  
*Venkataramanan Balakrishnan*  
14:30-15:00 **Periodic Multirate Systems,  $\mu$ -Gap and Robust Stabilization**,  
*Li Qiu, Li Chai*  
15:00-15:30 Spectral Factorization and Sums of Squares via Semidefinite Programming,  
*Hugo Woerdeman*  
15:30-16:00 Robustness Analysis via Stability Radii, Spectral Value Sets and  $\mu$ -Functions,  
*Michael Karow*

**Room: 208, Session: THM5**

*Chair:* Maria Elena Valcher  
*Title:* **The Behavioral Approach to Dynamic Systems**

14:00-14:30 Deterministic Kalman Filtering,  
*Jan C. Willems*  
14:30-15:00 **Over-Determined Systems** ,  
*Eva Zerz*  
15:00-15:30 **Regular Implementability nD Behaviors**,  
*Paula Rocha*  
15:30-16:00 **Cones of Trajectories as Subsets of Linear Systems: the Autonomous Case**,  
*Andrea Morettin*

**Room: 209, Session: THM6**

*Chair:* Naomi Leonard  
*Title:* **Control and Dynamics of Mechanical Systems I**

14:00-14:20 **Composition of Dirac Structures and Control of Port-Hamiltonian Systems**,  
*Arjan van der Schaft, J. Cervera*  
14:20-14:40 **Hamiltonian Attitude Dynamics for a Spacecraft with a Point Mass Oscillator**,  
*Craig Woolsey*  
14:40-15:00 **Controllable Kinematic Reductions for Mechanical Systems: Concepts, Computational Tools, and Examples**,  
*Andrew Lewis, Francesco Bullo, Kevin M. Lynch*  
15:00-15:20 **Matching and Stabilization of Linear Mechanical Systems**,  
*Dimitri Zenkov*  
15:20-15:40 **Matching and Stabilization of Constrained Systems**,  
*Guido Blankenstein*  
15:40-16:00 Extremal Flows on Stiefel Manifolds, and Riemannian Potatoes,  
*Peter Crouch, Anthony M. Bloch*

**Room: 210, Session: THM7**

*Chair:* Jan van Schuppen  
*Title:* **Control and Algebra**

14:00-14:30 **Control and Algebra - An Introduction**,  
*Jan H. van Schuppen*  
14:30-15:00 Towards an Algebraic Systems Theory of Hybrid Systems,

*George J. Pappas*

15:00-15:30 **The Category of a Affine Connection Control Systems,**

*Andrew Lewis*

15:30-16:00 **Coalgebra and Supervisory Control with Partial Observations,**

*Jan Komenda*

## **Afternoon:**

**Room: 102, Session: THP1**

*Chair:* Mark Alber

*Title:* **Complex Networks and Biological Applications 3**

16:30-17:00 **Connections Matter: A Boolean Model for the Segment Polarity Network of Drosophila Melanogaster,**

*Reka Albert*

17:00-17:30 **Modeling Mesenchymal Condensation during Limb Chondrogenesis,**

*Gilberto Tomas*

17:30-18:00 **Classification of scale-free networks,**

*Byungnam Kahng*

18:00-18:30 **Prediction of Protein Essentiality Based on Genomic Data,**

*Hawoong Jeong, Zoltan N. Oltvai and Albert-Laszlo Barabasi*

**Room: 126, Session: THP2**

*Chair:* Kirsten Morris, Olof Staffans

*Title:* **Distributed Parameter Systems: Stabilization and Control, Part I**

16:30-17:00 **Reciprocals of Regular Linear Systems: a Survey.,**

*Ruth Curtain*

17:00-17:30 **H-infinity Control of Acoustic Noise in a Duct with a Feedforward Configuration,**

*Kirsten Morris*

17:30-18:00 **Positivity and Dissipativity of Oscillating Diffusive Filters, Application to the Stability of Coupled Systems,**

*Denis Matignon, G. Dauphin*

18:00-18:30 **Can Positive Pseudo-Differential Operators of Diffusive Type Help Stabilize Unstable Systems?,**

*Denis Matignon*

**Room: 129, Session: THP3**

*Chair:* Tyrone Duncan

*Title:* **Stochastic Theory and Applications**

16:30-17:00 **An Approach to Stochastic Integration for Fractional Brownian Motion in a Hilbert Space,**

*Tyrone Duncan, B. Pasik-Duncan, J. Jakubowski*

17:00-17:30 **A Class of Tractable Partially Observed Discrete Stochastic Games,**

*William McEneaney*

17:30-18:00 **Hybrid Stock Models and Parameter Estimation,**

*George Yin, Q. Zhang, K. Yin*

18:00-18:30 **Jump-Diffusion Stock Return Models in Finance: Stochastic Process Density with Uniform-Jump Amplitude,**  
*Floyd B. Hanson, J. J. Westman*

**Room: 136, Session: THP4**

*Chair:* Georg Heinig, Vadim Olshevski

*Title:* **Computational Methods for Structured Matrices and Applications**

16:30-17:00 **Split Algorithms for Toeplitz and Toeplitz-plus-Hankel Matrices,**  
*Georg Heinig*

17:00-17:30 Structured LDPC Codes,  
*Amin Shokrollahi*

17:30-18:00 **Efficient Matrix Computations in Wideband Communications,**  
*Patrick Dewilde, Lang Tong, Alle-Jan van der Veen*

18:00-18:30 Stable Factorization of Hankel and Hankel-like Matrices,  
*Vadim Olshevsky, Michael Stewart*

**Room: 209, Session: THP5**

*Chair:* Naomi Leonard

*Title:* **Control and Dynamics of Mechanical Systems II**

16:30-16:50 **On the Ball and Beam Problem: Regulation with Guaranteed Transient Performance and Tracking Periodic Orbits,**

*Romeo Ortega, Fabio Gomez-Estern, Javier Aracil, Francisco Gordillo*

16:50-17:10 **Reduction of Controlled Lagrangian Systems with Symmetries,**  
*Dong Eui Chang*

17:10-17:30 Constrained Mechanical Systems with Impacts,  
*Patrick Hagerty*

17:30-17:50 **Adjoint of Hamiltonian Systems and Iterative Learning Control,**  
*Kenji Fujimoto, Toshiharu Sugie*

17:50-18:10 **Controllability of Mechanical Systems with Constraints and Symmetry,**  
*Jorge Cortes, Sonia Martínez, Jim P. Ostrowski, Hong Zhang*

18:10-18:30 The Use of Information in Swarm Motions of Autonomous Vehicles,  
*John Baillieul*

**Room: 210, Session: THP6**

*Chair:* Jan Willem Polderman

*Title:* **New Approaches to Adaptive Control**

16:30-16:50 **Cautious Hierarchical Switching Control of Stochastic Linear Systems,**  
*Marco Campi, Jaoa Hespanha, M. Prandini*

16:50-17:10 **Strong Robustness in Multi-Phase Adaptive Control: the Basic Scheme,**  
*Maria Cadic, Jan Willem Polderman*

17:10-17:30 **Near Optimal LQR Performance for Uncertain First Order Systems,**  
*Daniel Miller, Li Luo*

17:30-17:50 **Self-Tuning Control for Polynomial Systems: an Algorithmic Perspective,**

*Iven Mareels*

17:50-18:10 **Geometry of Adaptive Control, Part II: Optimization and Geodesics,**

*Felipe Pait, Diego Colon*

18:10-18:30 **Two Scale High Gain Adaptive Control,**

*Jan Willem Polderman, Iven Mareels*

## ***Friday August 16, 2002***

**8:00-9:00 Room: 101 Plenary Talk**

*Antony Bloch,*

**Conservative and Dissipative Dynamics in Classical and Quantum Systems.**

**9:00-10:00 Room: 101 Invited Talk**

*Raffaello D'Andrea,*

**Control of Interconnected Systems**

**9:00-10:00 Room: 102 Invited Talk**

*Allen Tannenbaum,*

**Controlled Active Vision in Image Guided Surgery and Therapy.**

**9:00-10:00 Room: 126 Invited Talk**

*Karl Kunisch,*

**From Viscoelastic Fluids to Constrained Optimal Control**

## **Morning:**

**Room: 102, Session: FA1**

*Chair:* Reinhard Laubenbacher

*Title:* **Genetic Networks**

10:30-11:00 Biochemistry by Numbers: Modeling, Signaling and Genetic Networks,  
*Pedro Mendes, Alberto de la Fuente, Paul Brazhnik, Stefan Hoops*

11:00-11:30 Designer Gene Networks,

*Mads Kaern, James J. Collins*

11:30-12:00 Function, Design, and Gene Circuitry,

*Michael A. Savageau*

12:00-12:30 Comparative analysis of mathematical models of intracellular networks,  
*Vassily Hatzimanikatis, Amit Mehra, Michael Beste*

**Room: 126, Session: FA2**

*Chair:* Belinda King, Kirsten Morris

*Title:* **Distributed Parameter Systems: Stabilization and Control, Part II**

10:30-10:50 **An Example of Output Regulation for Distributed Parameter Systems with Infinite Dimensional Exosystem**,  
*David Gilliam, Christopher I. Byrnes, Jeff B. Hood, Victor I. Shubov*

10:50-11:10 **Control of Systems with Infinitely Many Unstable Modes and Strongly Stabilizing Controllers Achieving a Desired Sensitivity**,  
*Suat Güümüşsoy, Hitay Özbay*

11:10-11:30 **Receding Horizon Control and Reduced-Order Methods**,  
*Ito Kazufumi*

11:30-11:50 **Some Problems of Control for Nonlinear Partial Differential Equations**,  
*David Russell*

11:50-12:10 **Global Stabilization of Systems of Partial Differential Equations Using Finite Dimensional Controllers**,  
*Igor Mezic*

12:10-12:30 **Output Regulation of Nonlinear Systems with State Delay**,  
*Emilia Fridman*

**Room: 129, Session: FA3**

*Chair:* Wolfgang Kliemann

*Title:* **Stochastic Control and Estimation**

10:30-10:50 **Algebraic Optimization Techniques for the Estimation of Zero-Beta Pricing Models**,  
*Bernard Hanzon*

10:50-11:10 **Trajectory Planning Under a Stochastic Uncertainty**,  
*Ulf Jansson, Clyde Martin, Yishao Zhou*

11:10-11:30 **An Addendum to the Problem of Stochastic Observability**,  
*Vasile Dragan, Teodor Morozan*

11:30-11:50 **Combined Optimization of Portfolio and Risk Exposure of an Insurance Company**,  
*Daniel Cajueiro, Takashi Yoneyama*

11:50-12:10 **On a Unitary Model for Two-Time Parameter Stationary Processes**,  
*Dan Emanuel Popovici*

**Room: 138, Session: FA4**

*Chair:* Patrick Dewilde

*Title:* **Stability and Numerics**

10:30-10:50 **Parameter Dependent Extremal Norms for Linear Parameter Varying Systems**,  
*Fabian Wirth*

10:50-11:10 **On the Sensitivity of Algebraic Riccati Equations**,  
*Ji-guang Sun*

11:10-11:30 **A Numerically Reliable Method for a Neglected but Unsolved Problem: State Feedback Decoupling with Stability for (A, B, C, D) Quadruples**,  
*Delin Chu*

11:30-11:50 **Stability Property of Solutions of Large-Scale Discrete-Time Systems**,  
*Tanya Lukyanova, Anatoliy Martynyuk*

11:50-12:10 **Pole Placement Under Output Feedback: A Simplification of the Problem**,  
*Michael Schilmoeller, Joyce O'Halloran*

12:10-12:30 To the Problem of Construction of Liapunov Functions for Continuous Large Scale Systems,  
*Vitaliy Slyn'ko, Anatolii Martynyuk*

**Room: 208, Session: FA5**

*Chair:* Harry Trentelman

*Title:* **A Behavioral Approach to Systems, Control and Coding Theory**

10:30-10:50 **A Behavioral Approach to List Decoding,**

*Jan Willem Polderman, Margreta Kuijper*

10:55-11:15 **Linear Hamiltonian systems,**

*Paolo Rapisarda, H.L. Trentelman*

11:20-11:40 **Approximate Time-Controllability versus Tme-Controllability,**

*Amol Sasane, M.K. Çamlıbel*

11:45-12:05 **On a Class of Time-Varying Behaviors,**

*Madhu Behur, M.K. Çamlıbel, A.J. Sasane, J.C. Willems*

12:10-12:30 **Synthesis of Strictly Dissipative Systems and the Strictly Suboptimal State Space H-infinity Control Problem,**

*Harry. L. Trentelman*

**Room: 209, Session: FA6**

*Chair:* Naomi Leonard

*Title:* **Coordinated Control of Vehicle Networks**

10:30-10:50 Stability of Systems of Self-Driven Particles Undergoing Phase Transitions,

*A. Stephen Morse*

10:50-11:10 **Stability Properties of Interconnected Vehicles,**

*Vijay Kumar, Herbert Tanner, George Pappas*

11:10-11:30 **Formations with a Mission: Stable Coordination of Vehicle Group Maneuvers,**

*Naomi Leonard, Petter Ogren, Edward Fiorelli*

11:30-11:50 **Coordinated Control Strategies for Networked Vehicles: An Application to Autonomous Underwater Vehicles,**

*Joao Sousa, Fernando Pereira*

11:50-12:10 Group Shape Feedback Control,

*Raffaello D'Andrea*

12:10-12:30 Hamiltonian Structures for Interacting Satellites,

*P.S. Krishnaprasad*

**Room: 210, Session: FA7**

*Chair:* Mrdjan Jankovic

*Title:* **Nonlinear Control and Applications**

10:30-11:00 **Application of Nonlinear Lyapunov-based Controllers and Observers to Gasoline Direct Injection Engine Charge and Torque Control,**

*Ilya Kolmanovsky*

11:00-11:30 **Multivariable Extremum Seeking Feedback: Analysis and Design,**

*Kartik B. Ariyur, Miroslav Krstic*

11:30-12:00 **Stabilization of Sets Parametrized by a Single Variable: Application to Ship Maneuvering**,

*Roger Skjetne, Andrew R. Teel, Petar V. Kokotovic*

12:00-12:30 **Nonlinear Control and Automotive Engine Applications**,

*Mrdjan Jankovic*

## Middle:

**Room: 102, Session: FM1**

*Chair:* Martin Haenggi

*Title:* **Mathematical Theory of Networks and Circuits**

14:00-14:20 **On Switched Hamiltonian Systems**,

*Arjan van der Schaft, Maurice Heemels, Karin Gerritsen*

14:20-14:40 **Parameter Influence on the Zeros of Network Determinants**,

*Sven Feldmann*

14:40-15:00 **Canonical Realizations of Linear Time-Varying Systems**,

*Fred Neerhoff, P. van der Kloet*

15:00-15:20 **In Search of Sensitivity in Network Optimization**,

*Mike Chen, Charuhas Pandit, Sean Meyn*

15:20-15:40 **Dynamic Eigenvalues for Scalar Linear Time-Varying Systems**,

*Pieter Van der Kloet, F.L. Neerhoff*

15:40-16:00 **Interconnection Structures in Physical Systems: a Mathematical Formulation**,

*Goran Golo, Orest V. Iftime, Arjan van der Schaft*

**Room: 126, Session: FM2**

*Chair:* Belinda King, Kirsten Morris

*Title:* **Distributed Parameter Systems: Applications and Computation, Part I**

14:00-14:30 **Performance Enhancement of Controlled Diffusion Processes by Moving Actuators**,

*Michael Demetriou, Nikolaos Kazantzis*

14:30-15:00 **Equilibrium Profiles of Tubular Reactor Nonlinear Models**,

*M. Laabissi, M. E. Achhab, Joseph Winkin, D. Dochain*

15:00-15:30 **Control of Electronic Material**,

*Katherine Kime*

15:30-16:00 **Active Sound Field Attenuation via Acoustic Arrays**,

*H.T. Banks*

**Room: 129, Session: FM3**

*Chair:* William Helton

*Title:* **Operator Theoretic Methods**

14:00-14:20 **A Nehari Theorem for Continuous-Time FIR Systems**,

*Gjerrit Meinsma, Mirkin, Zhong*

14:25-14:45 **Optimal Approximation of Linear Operators: a Singular Value Decomposition Approach**,

*Siep Weiland, Hardy Siahaan, Anton Stoorvogel*

14:50-15:10 **Geometrical and Spectral Properties of the Time-Varying Riccati Difference Equation,**

*Nevio Carpanese*

15:15-15:35 **A Generalization of the Widrow's Quantization Theorem,**

*Alexandru Isar, Dorina Isar*

15:40-16:00 **Functions of System and Their Perturbations,**

*Alexey (Olexiy) Tikhonov*

**Room: 138, Session: FM4**

*Chair:* David Nicholls

*Title:* **Nonlinear Surface Water Waves: Theory, Computation and Experiment**

14:00-14:30 Numerical Simulation of Blow-up Solutions of the Vector Nonlinear Schrödinger Equation,

*Catherine Sulem*

14:30-15:00 Existence Theory for Traveling Water Waves in Three Dimensions,

*Walter Craig*

15:00-15:30 Numerical Simulation of Traveling Water Waves,

*David Nicholls*

15:30-16:00 Similarities between the Quasi-Bubble and the Generalized Wave Continuity Equation Solutions to the Shallow Water Equations,

*John H. Atkinson, Joannes Westerink,*

**Room: 210, Session: FM5**

*Chair:* Lars Gruene, Fabian Wirth

*Title:* **Input-to-State Stability, Part II**

14:00-14:30 **Input-to-state stability of pulse width modulated control systems,**

*Andrew Teel, L. Moreau, D. Nesic*

14:30-15:00 ISS for Dynamic Inputs,

*Fabian Wirth*

15:00-15:30 **A Relaxation Theorem for Differential Inclusions with Applications to Stability Properties,**

*Yuan Wang, Eduardo Sontag, B. Ingalls*

15:30-16:00 **Characterization of the Non-Uniform in Time ISS Property and Applications,**

*Iasson Karafyllis, J. Tsinias*

**Room: 126, Session: FM6**

*Chair:* Belinda King, Ruth Curtain

*Title:* **Distributed Parameter Systems: Applications and Computation, Part II**

16:30-16:50 **POD Based Control of Beam Vibrations: Methodology and Experimental Implementations,**

*Gregory P. Hicks, Brian Lewis*

16:50-17:10 **A Comparison of Balancing Techniques for Reduced Order Controllers for Systems of PDEs,**



*Belinda King, Katie A. E. Camp*

17:10-17:30 Modeling and Control Issues Associated with Atomic Force Microscopy,

*Ralph Smith*

17:30-17:50 The Effect on Control Design of a Stabilized Finite Element Approximation for Burgers' Equation,

*Belinda King,*

17:50-18:10 **Functional Gain Computations for a 1D Parabolic Equation Using Non-Uniform Meshes.**,

*John Burns, Belinda B. King, Lizette Zietsman*

18:10-18:30 A Continuous Control Design Method,

*Jeff Borggaard*

# Index of Authors

## A

Absil, P.-A. WM4  
Achhab, M.E. FM2  
Akunov, Taalaibek A. THA5  
Al-Towlem, Tarek TUM3  
Alber, Mark WM1  
Albert, Reka THP1  
Alpay, Daniel MM4  
Alpay, Daniel WA5  
Altafini, Claudio MA6  
Altafini, Claudio WP6  
Antoulas, Thanos WA4  
Antoulas, Thanos WP4  
Antsaklis, Panos WM6  
Aracil, Javier THP5  
Ariyur, Kartik B. FA7  
Arov, Damir THA2  
Atkinson, J. H. FM4  
Aydin, Nuh TUM1

## B

Bagchi, Arunabha THA3  
Bai, Zhaojun WA4  
Baillieul, John THP5  
Baker, Brian M. WA1  
Balakrishnan, Venkataramanan THM4  
Ball, Joseph A. TUA3  
Ball, Joseph A. TUM4  
Ball, Joseph A. WM3  
Banerjee, Adrish TUP1  
Banks, H.T. FM2  
Barabasi, Albert-Laszlo WAINV2  
Barhorst, Alan TUA2  
Barry, J. WM2  
Bastin, Georges MA5  
Basu, Sankar WP3  
Bauer, Peter WA2  
Belur, Madhu FA5  
Belyi, Sergey TUM4  
Bertsimas, Dimitris WP5  
Blankenstein, Guido THM6  
Bloch, Anthony M. THM6  
Bloch, Antony M. FAPLEN1  
Blondel, Vincent WA7

Bolotnikov, Vladimir TUM4  
Borggaard, Jeff FM6  
Bortolin, Gianantonio MA2  
Bose, Nirmal WP3  
Boulant, Nicolas TUA6  
Branicky, Michael MP6  
Brazhnik, Paul FA1  
Brockett, Roger MAINV1  
Broucke, Mireille MP6  
Buchot, Jean-Marie TUM5  
Bullo, Francesco MP6  
Bullo, Francesco THM6  
Burns, John FM6  
Byrnes, C. I. TUM4  
Byrnes, C. I. FA2

## C

Cadic, Maria THP6  
Cajueiro, Daniel FA3  
Calafiore, Giuseppe TUA7  
Calistru, Catalin Nicolae TUP6  
Calkin, Neil MM1  
Camlibel, M. K. FA5  
Camlibel, M. K. FA5  
Camp, Katie A. E. FM6  
Campbell, Stephen TUA7  
Campi, Marco THP6  
Caponetto, DRiccardo WA6  
Caponetto, Riccardo TUA5  
Caramanis, Constantine WP5  
Carpanese, Nevio FM3  
Carter, John THA4  
Cernea, Aurelian MP2  
Cervera, J. THM6  
Chahlaoui, Younes WA4  
Chai, Li THM4  
Chaichanavong, Panu WM2  
Chakraborty, Arup K. WM1  
Chang, Dong Eui THP5  
Chatterjee, Sankar TUA2  
Chaves, Madalena TUA4  
Chen, Mike FM1  
Chesi, Graziano MP2  
Chesi, Graziano THA6  
Chiuso, Alessandro WM7

Chu, Delin FA4  
 Climent, Joan-Josep WP2  
 Cohen, Nir MA4  
 Cole, A. C. MM2  
 Collins, James J. FA1  
 Colon, Diego THP6  
 Colonius, Fritz TUA4  
 Conchello, Jose Angel TUM2  
 Coombs, Dan WP1  
 Cortes, Jorge THP5  
 Cory, David G. TUA6  
 Costello Jr., Daniel TUP1  
 Cowan, Noah THA6  
 Craig, Walter FM4  
 Craighead, Steven THM3  
 Crouch, Peter THM6  
 Curtain, Ruth THA2  
 Curtain, Ruth THA2  
 Curtain, Ruth THP2  
 Curtiss, Michael M. MP6

## D

D' Alessandro, Domenico WP6  
 D'Alessandro, Domenico MA6  
 D'Andrea, Raffaello FAINV1  
 D'Andrea, Raffaello FA6  
 Datta, Biswa N. WP4  
 Datta, Ruchira WP5  
 Dauphin, G. THP2  
 Davis, Mark WM1  
 Day, Martin MP2  
 Dayawansa, Wijesura P. TUA2  
 De Cock, Katrien MM3  
 De Koning, W.L. TUP4  
 De Koning, Willem L. WA7  
 de la Fuente, Alberto FA1  
 De Leenheer, Patrick MA5  
 De Moor, Bart MM3  
 de Oliveira, Mauricio THA7  
 de Snoo, Henk TUM4  
 Deconinck, Bernard THA4  
 Deistler, Manfred TUM6  
 Del Buono, N. WM4  
 Delattre, Cedric TUP5  
 Demetriou, Michael FM2  
 Devanathan, Rajagopalan MM2  
 Dewilde, Patrick WA5  
 Dewilde, Patrick THP4  
 Dey, Subhrakanti TUA5

Dieci, Luca WM4  
 Digailova, Irina TUM6  
 Dijkma, Aad MM4  
 Dijkma, Aad MP4  
 Dochain, D. FM2  
 Dochain, Denis TUP5  
 Dougal, Roger MA2  
 Dragan, Vasile TUP6  
 Dragan, Vasile FA3  
 Duncan, Tyrone THP3  
 Dustin, Michael TUP2  
 Dym, Harry MM4  
 Dymkov, S. THA5  
 Dymkov, M. THA5

## E

Edidin, Michael WM1  
 Eidelman, Yuli WA5  
 El Ghaoui, Laurent TUA7  
 Elia, Michele TUM1  
 Elia, Nicola MP1  
 Enquist, Per MM3  
 Eremenko, Alex MM5  
 Evans, Robin TUA5  
 Evans, Robin J. MP1

## F

Fabijonas, Bruce MA2  
 Fagnani, Fabio MP1  
 Farina, Lorenzo MA5  
 Fathpour, Nanaz WM5  
 Feintuch, Avraham WA5  
 Feldmann, Sven FM1  
 Fernànez-Anaya, G. TUP6  
 Ferrante, Augusto MA6  
 Ferrante, Augusto MM3  
 Finesso, Lorenzo WM7  
 Fiorelli, Edward FA6  
 Fliess, Michel TUP1  
 Foote, Jefferson WA1  
 Forgas, Gabor THM1  
 Fortuna, Luigi MM6  
 Fortuna, Luigi TUA5  
 Fortuna, Luigi WA6  
 Fortunato, Evan M. TUA6  
 Frasca, Mattia TUA5  
 Frazho, A. MM4

French, Mark MA7  
 French, Mark MA7  
 Fridman, Emilia FA2  
 Friedland, Shmuel MA1  
 Frossard, Pascal WA2  
 Fuad, Yusuf TUP4  
 Fuhrmann, Paul MA7  
 Fuhrmann, Paul A. TUP1  
 Fujimoto, Kenji THP5  
 Fujisawa, Yoshinori WP2  
 Funahashi, Yasuyuki TUM3  
 Fuwa, Yasushi WP2

## G

Güümüüşoy, Suat FA2  
 Gabrielov, A. MM5  
 Galkowski, K. THA5  
 Galkowski, Krzysztof TUM3  
 Galkowski, Krzysztof THA5  
 Gallivan, K. WA4  
 Garrido, R. TUM6  
 Gayer, Tobias WA6  
 Geman, Oana TUP6  
 Gerritsen, Karin FM1  
 Gilliam, David FA2  
 Gluesing-Luerssen, Heide MP5  
 Gluesing-Luerssen, Heide TUP1  
 Gluesing-Luerssen, Heide TUP1  
 Gluesing-Luerssen, Heide WA3  
 Gohberg, Israel WA5  
 Goldstein, Byron WP1  
 Golo, Goran WM5  
 Golo, Goran FM1  
 Gombani, A. MM3  
 Gombani, Andrea THA3  
 Gombao, Sophie TUM5  
 Gomez-Estern, Fabio THP5  
 Gordillo, Francisco THP5  
 Gosh, Bijoy TUA2  
 Gough, N. E. MM2  
 Gray, W. Steven MM2  
 Greentree, A.D. WP6  
 Greferath, Marcus TUM1  
 Greferath, Marcus TUM1  
 Gregor, Jiri TUP3  
 Grimble, Michael MA7  
 Grimble, Michael TUM5  
 Gruene, Lars TUA4  
 Guo, B.Z. THM2

Gurvits, Leonid MP2  
 Gutman, Per-Olof MA2  
 Gutman, Per-Olof MA7

## H

Habets, Luc C.G.J.M. MP5  
 Haenggi, Martin WA2  
 Hagerty, Patrick THP5  
 Hajek, Bruce MAPLEN1  
 Han, Guangyue TUA1  
 Hanson, Floyd B. MA2  
 Hanson, Floyd B. WP4  
 Hanson, Floyd B. THP3  
 Hanzon, Bernard MM6  
 Hanzon, Bernard TUM6  
 Hanzon, Bernard TUP6  
 Hanzon, Bernard FA3  
 Hashimoto, K. THA6  
 Hassi, Seppo TUM4  
 Hassibi, Babak MP4  
 Hassibi, Babak TUA7  
 Hatzimanikatis, Vassily FA1  
 Havel, Timothy TUA6  
 Havel, Timothy F. WA1  
 Heemels, Maurice FM1  
 Heinig, Georg THP4  
 Heinkenschloss, Matthias THAINV3  
 Helmke, Uwe MA7  
 Helmke, Uwe MM6  
 Helmke, Uwe WM4  
 Helton, J. William WAPLEN1  
 Helton, J. William THA7  
 Henderson, Diane THA4  
 Henkel, Heather WP2  
 Hespanha, Joao THP6  
 Hespanha, Joao MP6  
 Hicks, Gregory P. FM6  
 Hinrichsen, Diederich MP5  
 Hofmann, Stefan TUM6  
 Hood, Jeff B. FA2  
 Hoops, Stefan FA1  
 Hoshi, Yoshikatsu WA7  
 Huang, Xianqing TUP4  
 Huang, Xianqing TUP4  
 Hueper, Knut WAINV3

## I

Idczak, Dariusz TUP3  
Iftime, Orest V. THA2  
Iftime, Orest V. FM1  
Ingalls, B. FM5  
Interlando, Carmelo TUM1  
Isar, Alexandru FM3  
Isar, Dorina FM3

## J

Jacob, Birgit THM2  
Jacobsen, Elling W. MA2  
Jaimoukha, Imad M. WP4  
Jakubowski, J. THP3  
Jank, Gerhard MM6  
Jankovic, Mrdjan FA7  
Jansson, Ulf FA3  
Jaschke, Stefan R. THA3  
Jeoong, Hawoong THP1  
Jibeteau, Dorina MM6  
Jonckheere, Edmond A. WM5  
Jordan, Jens WM4  
Jordan, Michael I. WM7

## K

Kaczorek, Tadeusz TUP3  
Kaern, Mads FA1  
Kahng, Byungnam THP1  
Kalyuzhnyi-Verbovetzky, Dmitry WM3  
Karafyllis, Iasson FM5  
Karow, Michael THM4  
Kavcic, Aleksandar WM2  
Kawamata, Masayuki THA5  
Kazantzis, Nikolaos WA6  
Kazantzis, Nikolaos FM2  
Kazufumi, Ito FA2  
Kern, Daniel MA2  
Khaneja, Navin WM2  
Kheifets, Alexander TUM4  
Kime, Katherine FM2  
Kimura, Hidenori TUP6  
King, Belinda FM6  
King, Belinda FM6  
King, Belinda B. FM6  
Klemesrud, Bruce THM3  
Kliemann, W. TUA4

Koetter, Ralf TUA1  
Kokotovic, Petar V. FA7  
Kolesnikov, Alexander MA2  
Kolesnikov, Alexander MA2  
Kolesnikov, Anatoly MA2  
Kolesnikov, Anatoly MP2  
Kolmanovsky, Ilya FA7  
Komenda, Jan THM7  
Kongprawechnon, Waree TUP6  
Koo, Jaehoon WP3  
Koutsoukos, Xenofon WM6  
Krajnik, Eduard WP3  
Kravaris, Costas WA6  
Kremer, Dirk MM6  
Kremer, Dirk MM6  
Krener, Arthur J. WA6  
Krishnaprasad, P.S. FA6  
Krstic, Miroslav FA7  
Kugi, Andreas WM5  
Kuijper, Margreta FA5  
Kumar, Vijay FA6  
Kunisch, Karl FAINV3  
Kurien, James WM6  
Kurzanski, Alexander B. MP2  
Kurzanski, Alexander B. TUM6  
Kuzmenko, Andrew MP2

## L

Laabissi, M. FM2  
Lagonotte, Patrick TUP5  
Langer, Heinz MP4  
Langer, Matthias MP4  
Le Boudec, Jean-Yves WA2  
Le Boudec, Jean-Yves WA2  
Lee, Peter L. WM1  
Lemmon, M.D. WM6  
Lemonnier, D. WA4  
Leonard, Naomi FA6  
Levchenko, Andrea THA1  
Levy, Bernard TUA7  
Lewin, Paul TUM3  
Lewis, Andrew THM6  
Lewis, Andrew THM7  
Lewis, Brian FM6  
Lewkowicz, Izchak MA4  
Li, Jing-Rebecca WA4  
Li, Tien-Yien MM5  
Li, Yaqin MM2  
Liberzon, Daniel TUA4

Lin, Wei TUP4  
 Lin, Wei TUP4  
 Lindquist, Anders TUM4  
 Lippuner, Dani WM2  
 Liu, Jialing MP1  
 Loeliger, Hans-Andrea MAINV2  
 Loeliger, Hans-Andrea WM2  
 Lomadze, Vakhtang MP5  
 Lomadze, Vakhtang TUA5  
 Lomadze, Vakhtang TUA5  
 Lopez, L. WM4  
 Lototsky, Sergey MP3  
 Lukyanova, Tanya FA4  
 Luo, Li THP6  
 Lynch, Kevin M. THM6

## M

Mahony, R. WM4  
 Malakorn, Tanit TUM4  
 Malinovsky, Vladimir TUA6  
 Marcus, Brian WM2  
 Marcus, P. TUA2  
 Mareels, Iven THP6  
 Mareels, Iven THP6  
 Mart´nez, Sonia THP5  
 Martin, Clyde TUA2  
 Martin, Clyde TUA2  
 Martin, Clyde FA3  
 Martin, Peter MA7  
 Martinez-Garcia, Juan Carlos TUM6  
 Martinez-Garcia, Juan Carlos TUP6  
 Martynyuk, Anatoliy FA4  
 Martynyuk, Anatoliy FA4  
 Matignon, Denis THP2  
 Matignon, Denis THP2  
 Maze, Gerard WP2  
 Mboup, Mamadou TUP5  
 McClamroch, N. Harris MM2  
 McCullough, Scott TUM4  
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 McEneaney, William THP3  
 McLaughlin, S. WM2  
 Meerbergen, K. WA4  
 Mehl, Christian MM6  
 Meinsma, Gjerrit FM3  
 Mendes, Pedro FA1  
 Meyn, Sean FM1  
 Mezic, Igor FA2

Mezouar, Youcef THA6  
 Michaletzky, Gyorgy MM3  
 Michel, A.N. WM6  
 Micheli, Mario WM7  
 Michtchenko, Anna WM5  
 Mikkola, Kalle M. THA2  
 Miller, Daniel THP6  
 Minchenko, Leonid MM2  
 Mirkin, FM3  
 Mirkin, Boris MA7  
 Mitter, Sanjoy MP1  
 Mitter, Sanjoy WM2  
 Mohamedy, Alaa TUM5  
 Molchanov, A.P. WM6  
 Monico, Christopher WP2  
 Moore, Helen WM1  
 Moreau, L. FM5  
 Morettin, Andrea THM5  
 Mori, Kazuyoshi MP5  
 Morozan, Teodor FA3  
 Morris, Kirsten THM2  
 Morris, Kirsten THP2  
 Morse, A. Stephen FA6  
 Muscato, Giovanni MM6

## N

Nabieva, Elena WM1  
 Nagamune, Ryoza TUP6  
 Nair, Girish MP1  
 Nair, Girish TUA5  
 Nakaura, Shigeki WA7  
 Nayak, Aravind WM2  
 Neerhoff, Fred FM1  
 Neerhoff, Fred FM1  
 Nesic, D. FM5  
 Newman, Mark THA1  
 Nicholls, David FM4  
 Nikoukhah, Ramine TUA7  
 Nikoukhah, Ramine TUA7

## O

O'Halloran, Joyce FA4  
 O'Sullivan, Michael TUM1  
 Ober, Raimund J. TUM2  
 Ober, Raimund J. TUA6  
 Ogren, Petter FA6  
 Olivi, Martine TUP6

Olshevsky, Vadim THP4  
 Ooba, Tatsushi TUM3  
 Opmeer, Mark R. THA2  
 Ordys, Andrzej TUM5  
 Ortega, Antonio MP6  
 Ortega, Romeo THP5  
 Ostrowski, Jim P. THA6  
 Ostrowski, Jim P. THP5  
 Owens, D. H. THA5  
 Owens, David H. TUM3  
 Owens, David H. THA5  
 Ozbay, Hitay FA2

## P

Pait, Felipe THP6  
 Pandit, Charuhas FM1  
 Papakos, Vasilios WP4  
 Pappas, George J. WM5  
 Pappas, George J. THM7  
 Pappas, George J. FA6  
 Parrilo, Pablo A. TUA5  
 Parrilo, Pablo A. WP5  
 Parrilo, Pablo A. THA7  
 Pasik-Duncan, B. THP3  
 Pavon, Michele MA6  
 Pecora, Lou THM1  
 Peeters, Ralf TUP6  
 Pereira, Fernando FA6  
 Petersen, Mark A. MA4  
 Picci, Giorgio MM3  
 Picci, Giorgio WM7  
 Picci, Giorgio WM7  
 Pinzoni, Stefano MM3  
 Pivovarchik, Vjacheslav MP4  
 Plischke, Elmar MP5  
 Polderman, Jan Willem THP6  
 Polderman, Jan Willem THP6  
 Polderman, Jan Willem FA5  
 Polis, Michael TUP5  
 Polpitiya, A. TUA2  
 Popov, Andrey MA2  
 Popovici, Adriana WP3  
 Popovici, Dan Emanuel WP3  
 Popovici, Dan Emanuel FA3  
 Porto, Domenico WA6  
 Prajna, Stephen TUA5  
 Prandini, M. THP6  
 Prattichizzo, D. THA6  
 Pravia, Marco A. TUA6

Premaratne, Kamal WA2  
 Provost, A. MA5  
 Putinar, Mihai WP5

## Q

Qian, Chunjiang TUP4  
 Qiu, Li THM4

## R

Raccanelli, Giorgio MA6  
 Radcliffe, James TUM3  
 Ramakrishna, Viswanath WP6  
 Ran, A. C. M. MA4  
 Rantzer, Anders WA7  
 Rapisarda, Paolo FA5  
 Raymond, Jean-Pierre TUM5  
 Rebarber, Richard THM2  
 Reurings, Martine C. B. THA7  
 Reznick, Bruce WP5  
 Ribarits, Thomas TUM6  
 Ricardo, Sandra MM6  
 Roberson, Dawnlee TUM6  
 Rocha, Paula TUP3  
 Rocha, Paula THM5  
 Rodman, Leiba MA4  
 Rogers, Eric TUM3  
 Rogers, Eric THA5  
 Rogers, Eric THA5  
 Rosenthal, Joachim TUA1  
 Rosenthal, Joachim TUP1  
 Rosenthal, Joachim WP2  
 Rovnyak, Jim MM4  
 Runggaldier, Wolfgang J. THAINV2  
 Runggaldier, Wolfgang J. THA3  
 Russell, David FA2

## S

Saito, Osami TUM3  
 Sakhnovich, Alexander L. MM4  
 Sakhnovich, L. A. MA4  
 Salazar-Silva, G.H. TUM6  
 Salapaka, Murti WA6  
 Sampei, Mitsuji WA7  
 Sanei, Ahmad MA7  
 Sanyal, Amit K. MM2

Sarkissian, Daniil	WP4	
Sasane, Amol	FA5	
Sasane, Amol	THA2	
Sasane, Amol	FA5	
Sasane, Amol J.	THA2	
Savageau, Michael A.	FA1	
Scanavino, Bartolo	TUP1	
Schilmoeller, Michael	FA4	
Schirmer, Sonia G.	WP6	
Schirmer, Sonia G.	MA6	
Schlacher, Kurt	WM5	
Schmale, Wiland	TUP1	
Schmidt, Henning	MA2	
Schovanec, Lawrence	TUA2	
Schrader, Cheryl	TUM6	
Schroeder, Dierk	TUM6	
Schuck, Peter	TUP2	
Schumacher, J. M. (Hans)		THA3
Sebastian, Abu	WA6	
Segur, Harvey	THA4	
Sepulchre, Rodolphe	WM4	
Shang, Ying	WM6	
Shen, Jinglai	MM2	
Shi, Yun Q.	WP3	
Shokrollahi, Amin	THP4	
Shondin, Yuri	MP4	
Shubov, V.I.	FA2	
Siahaan, Hardy	FM3	
Silva-Ortigoza, Ramon		WA7
Sindano, H.	MM2	
Sira-Ramirez, Hebert		WA7
Siverguina, Irina	TUP5	
Skjetne, Roger	FA7	
Sklarz, Shlomo	WP6	
Skoogh, Daniel	WA4	
Slyn'ko, Vitaliy	FA4	
Smarandache, Roxana	TUM1	
Smarandache, Roxana	TUP1	
Smith, Hal	MA5	
Smith, Ralph	FM6	
Solomon, A. I.	MA6	
Solyom, Stefan	WA7	
Song, Guobiao	MP6	
Sontag, Eduardo	TUA4	
Sontag, Eduardo	THAPLEN1	
Sontag, Eduardo	FM5	
Sorensen, Dan	WA4	
Soulier, Fabien	TUP5	
Sousa, Joao	FA6	
Spitkovsky, I. M.	MA4	
Srai, Manjit Singh	MM2	
Staffans, Olof	THAINV1	
Staffans, Olof	THA2	
Stefan, Radu	MM6	
Stern, Lawrence	WP1	
Stewart, Michael	THP4	
Stockbridge, Richard H.		MP3
Stoica, Adrian	TUP6	
Stoorvogel, Anton	FM3	
Strang, Gilbert	TUAPLEN1	
Striha, Melissa	TUP1	
Sugie, Toshiharu	THP5	
Sulem, Catherine	FM4	
Sulikowski,, Bartek	THA5	
Sun, Ji-guang	FA4	
Sun, Ye	WM6	
Suresh Kumar, K.		THA3
<b>T</b>		
Tabuada, Paulo	WM5	
Taksar, Michael	THM3	
Talasila, Viswanath	WM5	
Tannenbaum, Allen	FAINV2	
Tanner, Herbert	FA6	
Tannor, David	WP6	
Tatikonda, Sekhar	MP1	
Tatikonda, Sekhar	WM2	
Tchobanou, Mikhail	WM3	
Teel, Andrew	FM5	
Teel, Andrew R.	FA7	
Teklemariam, Grum	TUA6	
Tesi, Alberto	MP2	
Theys, Jacques	WA7	
Thiran, Patrick	WA2	
Thompson, Nancy L.		TUP2
Tikhonov, Alexey (Olexiy)		FM3
Tomas, Gilberto	THP1	
Tong, Lang	THP4	
Topchiev, Boris	TUP4	
Treichl, Thomas	TUM6	
Trentelman, H.L.	FA5	
Trentelman, Harry. L.		FA5
Tretter, Christiane	MP4	
Trumpf, Jochen	MA7	
Tsekanovskii, E. R.		TUM4
Tsinias, J.	FM5	
Turinici, Gabriel		TUA6



## U

Ushakov, Anatoly V. [THA5](#)  
Ushida, Shun [TUP6](#)

## V

Valcher, Maria Elena [MA5](#)  
van der Kloet, Pieter [FM1](#)  
Van der Kloet, Pieter [FM1](#)  
van der Mee, Cornelis [MP4](#)  
van der Schaft, Arjan [TUAINV1](#)  
van der Schaft, Arjan [WM5](#)  
van der Schaft, Arjan [THM6](#)  
van der Schaft, Arjan [FM1](#)  
van der Schaft, Arjan [FM1](#)  
van der Veen, Alle-Jan [THP4](#)  
van der Woude, J.W. [TUP4](#)  
Van Dooren, P. [WA4](#)  
Van Dooren, P. [WA4](#)  
van Schuppen, Jan H. [MP5](#)  
van Schuppen, Jan H. [THM7](#)  
Vandendorpe, A. [WA4](#)  
Vandendorpe, Antoine [WA4](#)  
Varaiya, Pravin [MP2](#)  
Vasudevan, Lavanya [MP6](#)  
Vatta, Francesca [TUP1](#)  
Verduyn Lunel, Sjoerd [MAINV3](#)  
Verriest, Erik [WM5](#)  
Verschelde, Jan [MM5](#)  
Verscheure, Olivier [WA2](#)  
Veselov, Gennady [MA2](#)  
Vespignani, Alessandro [THM1](#)  
Vettori, Paolo [TUP4](#)  
Vicino, A. [THA6](#)  
Vicino, Antonio [MP2](#)  
Vinnikov, Victor [TUA3](#)  
Vladimirov, Alexander [WA7](#)  
Vojnovic, Milan [WA2](#)  
Volosevich, Aleksey [MM2](#)  
Vontobel, Pascal O. [TUA1](#)  
Vontobel, Pascal O. [WM2](#)

## W

Wang, Dianhui [MP5](#)  
Wang, Dianhui [TUA5](#)  
Wang, Hui [MP3](#)  
Wang, Long [WA7](#)

Wang, Xiaochang [MM5](#)  
Wang, Xiaochang [WP2](#)  
Wang, Xiaoshen [MM5](#)  
Wang, Yijing [WA7](#)  
Wang, Yuan [FM5](#)  
Wang, Yusong [MM5](#)  
Ward, E. Sally [TUM2](#)  
Weeks, William [MM1](#)  
Weiland, Siep [FM3](#)  
Westerink, Joannes [FM4](#)  
Westman, J. J. [WP4](#)  
Westman, J. J. [THP3](#)  
Westman, John [MA2](#)  
Willems, J.C. [FA5](#)  
Willems, Jan C. [WAINV1](#)  
Willems, Jan C. [WA3](#)  
Willems, Jan C. [THM5](#)  
Winkin, Joseph [TUP5](#)  
Winkin, Joseph [FM2](#)  
Wirth, Fabian [MP5](#)  
Wirth, Fabian [FA4](#)  
Wirth, Fabian [FM5](#)  
Wittenmark, Bjorn [MP1](#)  
Woerdeman, H. J. [MA4](#)  
Woerdeman, Hugo [THM4](#)  
Wofsy, Carla [WP1](#)  
Wong, Wing Shing [MP1](#)  
Wood, Jeff [TUAINV3](#)  
Woodburn, Cynthia [WM3](#)  
Woolsey, Craig [THM6](#)  
Wu, Mengnien [MM5](#)

## X

Xiao, MingQing [WA6](#)  
Xibilia, Maria Gabriella [MM6](#)  
Xie, Guangming [WA7](#)  
Xie, Min [WA2](#)  
Xu,, Li [TUM3](#)  
Xu, Li [THA5](#)  
Xu, Xuping [WM6](#)

## Y

Yamada, Minoru [TUM3](#)  
Yamamoto, Yutaka [THM2](#)  
Yang, Shaohua [WM2](#)  
Yin, George [MP3](#)  
Yin, George [THP3](#)

Yin, K. THP3  
Ying, Jiang-Qian THA5  
Yoneyama, Takashi FA3  
Yoshizawa, Shintaro MM6  
Yu, Runyi MP5  
Yu, Runyi TUA5

## Z

Zampieri, Sandro MP1  
Zefran, Milos MP6  
Zehetleitner, Kurt WM5  
Zenkov, Dimitri THM6  
Zerz, Eva WA3

Zerz, Eva THM5  
Zhang, Hong THP5  
Zhang, Jinsong WA2  
Zhang, Q. THP3  
Zhang, Xi Min WP3  
Zhao, Feng WM6  
Zhirabok, Aleksey WM5  
Zhong, FM3  
Zhou, X. Y. MP3  
Zhou, Xun Yu THM3  
Zhou, Yishao FA3  
Zietsman, Lizette FM6  
Zirilli, Francesco TUM5  
Zwart, Hans THM2