

**6<sup>th</sup> International Workshop on Multidimensional Systems (NDS'09)  
 Department of Mathematics, Aristotle University of Thessaloniki  
 Thessaloniki, June 29 - July 1, 2009**

| Monday<br>June 29, 2009   | Tuesday<br>June 30, 2009   | Wednesday<br>July 1, 2009   |
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| 8:30-9:10<br>Registration   |  |   |
| 9:10-9:30<br>Opening  |  |   |
| 9:30-10:30<br><br><b>Plenary Talk</b><br>Paula Rocha<br>Chair: Eva Zerz<br><br><i>Stabilization of nD behaviors</i>   | 9:00-10:00<br><br><b>Plenary Talk</b><br>Anton Kummert<br>Chair: Krzysztof Galkowski<br><br><i>Fundamentals and Application Results for<br/>Multidimensional Circuits</i>  | 9:00-10:00<br><br><b>Plenary Talk</b><br>Danwei Wang<br>Chair: Anton Kummert<br><br><i>Extension of Learnable Bandwidth for<br/>Iterative Learning Control</i>                                  |
| 10:30-11:00<br>Coffee Break   | 10:00-10:30<br>Coffee Break  | 10:00-10:30<br>Coffee Break   |
| 11:00-13:05<br><br><b>Session Mo1</b><br><br><i>Multidimensional Systems 1</i><br><br>Chair: Tadeusz Kaczorek<br><br>1. Eva Zerz, <i>Strongly Autonomous Behaviors<br/>Over Finite Rings.</i> | 10:30-12:35<br><br><b>Session Tu1</b><br><br><i>Multidimensional Signal Processing</i><br><br>Chair: Anton Kummert<br><br>1. Anselm Haselhoff and Anton Kummert,<br><i>2D Line Filters for Vision-based Lane</i> | 10:30-12:35<br><br><b>Session We1</b><br><br><i>Multidimensional Systems 2</i><br><br>Chair: Eva Zerz<br><br>1. Michael Dymkov, Krzysztof Galkowski,<br>Eric Rogers, <i>Dynamic programming</i> |

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| <p>2. <u>Tadeusz Kaczorek</u>, <i>Stability of Positive Fractional 2D Linear Systems with Delays</i>.</p> <p>3. <u>Lorenzo Ntogramatzidis</u>, <u>Michael Cantoni</u> and <u>Ran Yang</u>, <i>Controlled and Conditioned Invariance with Stability for Two-Dimensional Systems</i>.</p> <p>4. <u>Dorota Bors</u> and <u>Stanislaw Walczak</u>, <i>On some nonlinear second order control systems</i>.</p> <p>5. <u>Femke van Belzen</u> and <u>Siep Weiland</u>, <i>Approximation of <math>\mathbb{S}nSD</math> Systems using Tensor Decompositions</i>.</p> | <p><i>Detection and Tracking</i>.</p> <p>2. <u>Joerg Velten</u>, <u>Sam Schauland</u> and <u>Anton Kummert</u>, <i>A realization framework based on a natural state space description of discrete k-D signal processing systems</i>.</p> <p>3. <u>Hongwei Li</u>, <u>Anton Kummert</u> and <u>Sam Schauland</u> and <u>Joerg Velten</u>, <i>3-D Wave Digital Filter Implementation on a Virtex2 FPGA Board with external SDRAM</i>.</p> <p>4. <u>Sam Schauland</u>, <u>Joerg Velten</u>, <u>Anton Kummert</u> and <u>Krzysztof Galkowski</u>, <i>Insufficiencies of the Practical BIBO Stability Concept with Regard to Signal Processing Systems</i>.</p> <p>5. <u>Sebastian Pfeiffer</u>, <u>Michael Mai</u>, <u>Wolfgang Globke</u> and <u>Jan Calliess</u>, <i>On Generalized Separation and the Speed-up of Local Operators on Multi-dimensional Signals</i>.</p> | <p><i>method for nonlinear discrete 2D systems</i>.</p> <p>2. <u>Nourddine Azaoui</u>, <u>Abdelkader Miraoui</u>, <u>Hichem Snoussi</u> and <u>Jacques Duchêne</u>, <i>Empirical Mode Decomposition for vectorial bi-dimensional signals</i>.</p> <p>3. <u>Ran Yang</u>, <u>Lorenzo Ntogramatzidis</u> and <u>Michael Cantoni</u>, <i>On Kalman filtering for 2-D system in Fornasini-Marchesini form</i>.</p> <p>4. <u>Petr Augusta</u> and <u>Zdeněk Hurák</u>, <i>POLMAT library now within Symbolic Math Toolbox for Matlab in multidimensional systems computations</i>.</p> <p>5. <u>Dariusz Idczak</u> and <u>Marek Majewski</u>, <i>A generalization of the Poincare-Miranda theorem with an application to the controllability of nonlinear repetitive processes</i>.</p> |
| <p>13:05-15:00</p> <p>Lunch</p>  | <p>12:35-14:35</p> <p>Lunch</p>  | <p>12:35-14:35</p> <p>Lunch</p>  |

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| <p style="text-align: center;"><b>Invited Session Mo2</b></p> <p style="text-align: center;"><b><i>Multidimensional Systems Related To Operator Algebras, Operator Theory and Stochastics</i></b></p> <p style="text-align: center;">Chair: Joseph A. Ball</p> <ol style="list-style-type: none"> <li>1. <u>Daniel Alpay</u> and David Levanony, <i>A white noise approach to linear stochastic systems.</i></li> <li>2. <u>Liran Shaul</u> and Victor Vinnikov, <i>State feedback for overdetermined 2D systems: Pole placement for bundle maps over an algebraic curve.</i></li> <li>3. <u>Victor Vinnikov</u>, <i>Rational functions in noncommuting variables, their realizations, and applications to Linear Matrix Inequalities.</i></li> </ol> | <p style="text-align: center;"><b>Social Program</b></p> <p style="text-align: center;"><b>Excursion to Vergina</b></p> | <p style="text-align: center;"><b>Session We2</b></p> <p style="text-align: center;"><b><i>Repetitive Processes 1</i></b></p> <p style="text-align: center;">Chair: Krzysztof Galkowski</p> <ol style="list-style-type: none"> <li>1. <u>Teresa Azevedo Perdicoulis</u> and Gerhard Jank, <i>Linear Quadratic OL-Nash Games on Repetitive Processes with Smoothing.</i></li> <li>2. <u>Pawel Dabkowski</u>, <u>Krzysztof Galkowski</u> and <u>Eric Rogers</u>, <i>A New Simplified Approach to Iterative Learning Control, Based on the Strong Practical Stability of Repetitive Processes.</i></li> <li>3. <u>Wojciech Paszke</u> and <u>Olivier Bachelier</u>, <i>New Robust Stability and Stabilization Conditions for Linear Repetitive Processes.</i></li> </ol> |
| <p style="text-align: center;">15:00-16:15</p>  | <p style="text-align: center;">14:35</p>  | <p style="text-align: center;">14:35-15:50</p>  |

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| <p style="text-align: center;">16:15-16:45</p> <p style="text-align: center;">Coffee Break</p>   | <p style="text-align: center;">15:50-16:20</p> <p style="text-align: center;">Coffee Break</p>  |
| <p style="text-align: center;">16:45-18:00</p> <p style="text-align: center;"><b>Invited Session Mo3</b></p> <p style="text-align: center;"><i><b>Multidimensional Systems Related To Operator Algebras, Operator Theory and Stochastics</b></i></p> <p style="text-align: center;">Chair: Victor Vinnikov</p> <ol style="list-style-type: none"> <li>1. <u>Joseph Ball</u> and <u>Grant Boquet</u>, <i>Livsic Realization of 2D-Behaviors with Degree One Autonomy</i>.</li> <li>2. J.A. Ball and <u>Sanne ter Horst</u>, <i>A <math>W^*</math>-correspondence approach to multidimensional linear dissipative systems</i>.</li> <li>3. <u>Daniel Alpay</u> and <u>Mamadou Mboup</u>, <i>A natural transfer function space for linear discrete time-invariant and scale-invariant systems</i>.</li> </ol> | <p style="text-align: center;">16:20-17:35</p> <p style="text-align: center;"><b>Session We3</b></p> <p style="text-align: center;"><i><b>Repetitive Processes 2</b></i></p> <p style="text-align: center;">Chair: Rudolf Rabenstein</p> <ol style="list-style-type: none"> <li>1. <u>Blazej Cichy</u>, <u>Krzysztof Galkowski</u>, <u>Eric Rogers</u> and <u>Anton Kummert</u>, <i>Iterative Learning Control for the 'wave' linear repetitive processes</i>.</li> <li>2. <u>Rudolf Rabenstein</u> and <u>Peter Steffen</u>, <i>Implicit Discretization of Linear Partial Differential Equations and Repetitive Processes</i>.</li> <li>3. <u>Andrzej Janczak</u> and <u>Dominik Kujawa</u>, <i>Subspace Approach to Identification of Linear Repetitive Processes</i>.</li> </ol> |
| <p style="text-align: center;">21:00</p> <p style="text-align: center;">Workshop Dinner</p>  | <p style="text-align: center;">Closing</p> <p style="text-align: center;">17:40</p>   |