

2015 IEEE 9th International Workshop on Multidimensional (nD) Systems (nDS 2015)

**Vila Real, Portugal
7 – 9 September 2015**



**IEEE Catalog Number: CFP15612-POD
ISBN: 978-1-4799-8740-5**

TABLE OF CONTENTS

State Feedback Structural Stabilization Of 2D Discrete Roesser Models.....	1
<i>O. Bachelier, N. Yeganefer, D. Mehdi, W. Paszke</i>	
Existence And Uniqueness Of The Solutions Of Continuous Nonlinear 2D Roesser Models: The Locally Lipschitz Continuous Case	7
<i>R. David, F. Silva, N. Yeganefer, O. Bachelier</i>	
Computer Algebra Methods For Testing The Structural Stability Of Multidimensional Systems.....	11
<i>Y. Bouzidi, A. Quadrat, F. Rouillier</i>	
A Constructive Algebraic Analysis Approach to the Equivalence of Multidimensional Linear Systems.....	17
<i>T. Cluzeau</i>	
Euler–Bernoulli Beam Flatness Based Control With Constraints.....	23
<i>M. Bekcheva, L. Greco, H. Mounier, A. Quadrat</i>	
The Fornasini-Marchesini Model — Its Role in the Analysis and Control of Physical Systems.....	29
<i>E. Rogers</i>	
State Representations Of Finitely Generated nD Behaviors Over Rings	35
<i>E. Zerz</i>	
Self-Boundedness And Self-Hiddenness For Implicit Two-Dimensional Systems.....	39
<i>L. Ntogramatzidis</i>	
Guaranteed Cost Iterative Learning Control – An Application to Control of Permanent Magnet Synchronous Motors.....	45
<i>S. Mandra, K. Galkowski, H. Aschemann, A. Rauh</i>	
Alzheimer’s Electroencephalogram Event Scalp Localization	51
<i>P. Rodrigues, D. Freitas, J. Teixeira</i>	
Wideband 32-element 200-MHz 2-D IIR Beam Filters using ROACH-2 Virtex-6 sx475t FPGA.....	55
<i>V. Seneviratne, A. Madanayake, N. Udayanga</i>	
Map Building using Occupancy Grids with Differentiated Occupancy States	60
<i>A. Heinemann, J. Velten, A. Kummert</i>	
Classification of Ascending Steps and Stairs using Time-of-Flight Sensor Data.....	66
<i>C. Stahlschmidt, A. Gavrilidis, A. Kummert</i>	
Evaluation of Pedestrian Detection Fusion and Localization Based on the Idea of Car-To-X Communication.....	72
<i>A. Gavrilidis, C. Stahlschmidt, J. Velten, A. Kummert</i>	
Orientation And Positioning With Inertial Sensors For Walking Frame Guidance.....	78
<i>K. Kalischewski, D. Wagner, J. Velten, A. Kummert</i>	
Detection Of Ascending And Descending Stairways By Surface Normal Vectors	83
<i>D. Wagner, K. Kalischewski, J. Velten, A. Kummert</i>	
Censorship of Video Images with Adaptive Reconstruction Based on Spectral Domain Watermarking	88
<i>T. Sablik, J. Velten, A. Kummert</i>	
Series Concatenation Of 2D Convolutional Codes.....	93
<i>J. Climent, D. Napp, R. Pinto, R. Simoes</i>	
Nash Equilibrium With Wave Dynamics And Boundary Control	99
<i>T. Azevedo-Perdicoulis, G. Jank, P. Santos</i>	
Stabilization of Nonlinear 2D Fornasini-Marchesini and Roesser Systems.....	105
<i>P. Pakshin, J. Emelianova, K. Galkowski, E. Rogers</i>	
Application Specific Stability Of 3-D Roesser-Like Model Realizations.....	111
<i>J. Velten, A. Kummert, A. Gavrilidis, K. Galkowski</i>	
Meta-heuristics in Multidimensional Systems Stability Study.....	117
<i>E. Pires, P. Oliveira, J. Machado</i>	
Stabilization of Stochastic 2D Fornasini-Marchesini Systems	123
<i>P. Pakshin, J. Emelianova, M. Emelianov, K. Galkowski, E. Rogers</i>	
Stability And Stabilisation Of Active Ladder Circuits Modeled In The Form Of Two-Dimensional (2D) Systems.....	129
<i>B. Sulikowski, K. Galkowski, A. Kummert</i>	
An Unconditionally Stable Finite Difference Scheme Systems Described By Second Order Partial Differential Equations	135
<i>P. Augusta, B. Cichy, K. Galkowski, E. Rogers</i>	
Newton’s method for Modularity-preserving Multidimensional Wave Digital Filters.....	141
<i>T. Schwerdtfeger, A. Kummert</i>	

Design of a Millimeter-Wave Dish-Antenna based 3-D IIR Radar Digital Velocity Filter 147
S. Handagala, A. Madanayake, N. Udayanga
Author Index