

SAUM 2016 CONFERENCE

**PROGRAM**

SESSIONS OVERVIEW

Wednesday, November 9, 2016		
<i>Time</i>	<i>Activities</i>	<i>Place</i>
10:00 – 10:30	Registration	
10:30 – 11:00	Opening Ceremony	Room 1
11:00 – 12:00	Plenary Session I	Room 1
12:00 – 12:15	COMING Presentation	Room 1
12:30 – 13:30	Cocktail	
13:30 – 14:00	Presentation of Erasmus+ Projects: Re@WBC & IF4TM Presentation of HORIZON 2020 S2R Project SMART	Room 1
14:00 – 15:00	Plenary Session II	Room 1
15:15 – 16:45	<b>Session A:</b> Information and Communication Technologies I	Room 1
15:15 – 16:45	<b>Session B:</b> System Identification and Modeling I	Room 2
15:15 – 16:45	<b>Session C:</b> Intelligent Control	Room 3
17:00 – 18:00	<b>Session D:</b> Poster Session	Room 4

Thursday, November 10, 2016		
<i>Time</i>	<i>Activities</i>	<i>Place</i>
10:00 – 11:45	<b>Session E:</b> System Identification and Modeling II	Room 1
10:00 – 11:45	<b>Session F:</b> Information and Communication Technologies II	Room 2
10:00 – 11:45	<b>Session G:</b> Hydraulic and Pneumatic Systems	Room 3
12:00 – 13:00	Plenary Session III	Room 1
13:00 – 18:00	NeReLa Workshop	Room 1
14:00 – 15:00	<b>Session H:</b> Remote Control	Room 1
14:00 – 15:00	<b>Session I:</b> Applied Mathematics	Room 2
15:15 – 17:00	<b>Session J:</b> Industrial and Process Control	Room 1
15:15 – 17:00	<b>Session K:</b> Robotics	Room 2
19:00	Conference Dinner & Closing Ceremony	

# CONTENTS

## PLENARY SESSION I

Invited Lecture
G. M. Dimirovski
<a href="#"><u>Switched Fuzzy Systems: New Directions for Intelligent Control and Decision</u></a>

## PLENARY SESSION II

Invited paper
R.-E. Precup, S. Preitl, C.-A. Bojan-Dragos, M.-B. Radac, A.-I. Szedlak-Stinean, E.-L. Hedrea, R.-C. Roman
<a href="#"><u>Evolving Takagi-Sugeno Fuzzy Modeling Applications of Incremental Online Identification Algorithms</u></a>

## PLENARY SESSION III

Invited paper
G. M. Dimirovski
<a href="#"><u>An Overview of Fascinating Ideas on Complexity, Complex Networks and Systems in Computational Cybernetics</u></a>

## Session A: INFORMATION AND COMMUNICATION TECHNOLOGIES I

*Chairperson: D. Milović*

Session A	A1 • Regular paper
	Z. Perić, A. Jovanović, S. Vljakov <a href="#"><u>Comparative Analysis of Various PAM Constellations</u></a>
Session A	A2 • Regular paper
	J. Nikolić, Z. Perić <a href="#"><u>Optimal Design of Piecewise Linear Companding Scalar Quantizer for Laplacian Source of Unit Variance</u></a>
Session A	A3 • Regular paper
	A. M. Cvetković, V. M. Blagojević <a href="#"><u>The Influence of Co-channel Interference at the Relay on Outage Performance of Hybrid Satellite-Terrestrial Cooperative Network</u></a>
Session A	A4 • Regular paper
	Ž. J. Mančić, V. V. Petrović <a href="#"><u>Shielded Two-Wire Transmission Lines with Anisotropic Substrate Calculated by Strong FEM</u></a>
Session A	A5 • Regular paper
	H. Stefanović, D. Milić <a href="#"><u>Performance Analysis of Transmit Beam Forming and Diversity Reception Technique in Fading Channels</u></a>
Session A	A6 • Regular paper

M. I. Petković, G. T. Djordjević  
[Performance Analysis of Multi-hop Parallel Relaying FSO Systems Impaired by Atmospheric Turbulence and Pointing Errors](#)

**Session B: SYSTEM IDENTIFICATION AND MODELING I**

*Chairperson: V. Nikolić*

Session B	B1 • Regular paper
P. Lj. Janković, J. Č. Baralić, V. A. Blagojević <u><a href="#">Modeling as Way to Better Understanding of the Influencing Process Factors - AWJ Machining Case Study</a></u>	
Session B	B2 • Regular paper
M. Radić, Z. Stajić, M. Rašić <u><a href="#">Experimental Identification of Actual Performance Curves in Pump Stations</a></u>	
Session B	B3 • Regular paper
D. Marinković, F. Wesolowski, G. Rama, M. Zehn <u><a href="#">Some Improvements in Model Reduction Techniques for Structural Dynamics</a></u>	
Session B	B4 • Regular paper
I. Pavlović, Ž. Čojbašić, R. Pavlović, I. Ćirić, V. Nikolić <u><a href="#">Determination of Moment Lyapunov Exponents for Piezoelectric Beam</a></u>	
Session B	B5 • Regular paper
M. Lj. Jovanović, G. N. Radoičić, D. S. Jovanović <u><a href="#">Discrete Fourier Transformation Model for Determination of Live Human Forces Based on Experiment</a></u>	

**Session C: INTELLIGENT CONTROL**

*Chairperson: R.-E. Precup*

Session C	C1 • Regular paper
M. Milojković, D. Antić, M. Milovanović, S. Perić, S. S. Nikolić, D. B. Mitić <u><a href="#">Time Series Forecasting Using Endocrine Neural Network</a></u>	
Session C	C2 • Regular paper
N. Dučić, Ž. Čojbašić, R. Slavković, N. Marković <u><a href="#">GA and PSO Optimization of Feeders for Sand Casting Process</a></u>	
Session C	C3 • Regular paper
D. Veljković, D. Rančić <u><a href="#">Application fusion of spectral and prosodic features in the function of text-dependent speaker verification</a></u>	
Session C	C4 • Regular paper
N. Džaković, N. Dinkić, A. Stojnev, L. Stoimenov, D. Rančić <u><a href="#">Automatic Detection and Recognition of Digits from Video and Live Stream in Basketball Events</a></u>	
Session C	C5 • Regular paper
I. T. Ćirić, M. B. Simonović, M. V. Ćirić, M. Banić, V. Nikolić <u><a href="#">Towards Intelligent Automation of Marshalling Yard</a></u>	

## **Session D: POSTER SESSION**

*Chairperson: D. Mitić*

Session D	D1 • Regular paper
D. B. Petrović, G. S. Jovanović, G. S. Nikolić, T. R. Nikolić <a href="#"><u>A 75nW, 0.5V Subthreshold OTA Circuit Design</u></a>	
Session D	D2 • Regular paper
I. Anastasijević, M. P. Petronijević, L. M. Korunović <a href="#"><u>The Case Study of Harmonic Compensation Using Photovoltaic Energy Source</u></a>	
Session D	D3 • Regular paper
L. M. Korunović, I. Anastasijević, M. P. Petronijević <a href="#"><u>The Analysis of Current Distortion of Some Outdoor Lighting Sources</u></a>	
Session D	D4 • Regular paper
M. V. Mrvić, M. M. Potrebić, D. V. Tošić, Z. Ž. Cvetković <a href="#"><u>E-plane Bandpass Waveguide Filter with Improved Stopband Using Quarter-Wave Resonators</u></a>	
Session D	D5 • Regular paper
G. S. Nikolić, M. K. Stojčev, T. R. Nikolić, B. D. Petrović, G. S. Jovanović <a href="#"><u>Precise Time Synchronization in Synchronous Wireless Sensor Networks</u></a>	
Session D	D6 • Regular paper
V. Z. Kostić, N. N. Mitrović, B. G. Banković <a href="#"><u>The Monospiral Motorised Cable Reel in Crane Application</u></a>	
Session D	D7 • Regular paper
B. G. Banković, N. N. Mitrović, V. Z. Kostić, M. P. Petronijević, M. Milovanovic <a href="#"><u>Multi Drive System for Industrial Application</u></a>	
Session D	D8 • Regular paper
M. N. Dubyago, N. K. Poluyanovich <a href="#"><u>Preparation Deterioration of Insulation Process the based on the Partial Discharge Thermal Fluctuation Theory</u></a>	
Session D	D9 • Regular paper
N. Vučić, Z. Perić <a href="#"><u>Quasi-Logarithmic Quantizer with Golomb-Rice Coding</u></a>	
Session D	D10 • Regular paper
S. S. Nikolić, D. Antić, S. Perić, N. Danković, M. Spasić, M. Milovanović <a href="#"><u>Hybrid-Fuzzy Controllers Applied in DC Servo Drive</u></a>	
Session D	D11 • Regular paper
P. M. Živković, M. A. Tomić, Ž. Ž. Stevanović <a href="#"><u>Wind Energy Potentials of Kopaonik Mountain</u></a>	

## **Session E: SYSTEM IDENTIFICATION AND MODELING II**

*Chairperson: N. D. Pavlović*

Session E	E1 • Regular paper
L. K. Kuzmina <a href="#"><u>Stability Theory Methods and Singular Problems in Idealization of Mechanics models</u></a>	
Session E	E2 • Regular paper

V. S. Đorđević, V. Ž. Filipović	
<a href="#"><u>Recursive Identification of Takagi-Sugeno Models in the Presence of Piecewise Polynomial Disturbances</u></a>	
Session E	E3 • Regular paper
Lj. M. Dubonjić, V. Ž. Filipović, V. S. Đorđević	
<a href="#"><u>Outlier Robust One-Step-ahead Adaptive Predictor for Hammerstein Models</u></a>	
Session E	E4 • Regular paper
K. V. Aleksandrovich, M. M. Yurievich, M. A. Michailovich, P. N. Konstantinovich	
<a href="#"><u>Research Prospective Wind Power Plant with a Layout Type "Rotor Fairing"</u></a>	
Session E	E5 • Regular paper
E. Lazarevska	
<a href="#"><u>Modeling of Residuary Resistance in Sailing Yachts Based on Extreme Learning Machine</u></a>	
Session E	E6 • Regular paper
E. Lazarevska	
<a href="#"><u>A Fuzzy Model of the Residuary Resistance of Sailing Yachts</u></a>	

### **Session F: INFORMATION AND COMMUNICATION TECHNOLOGIES II**

*Chairperson: D. Rančić*

Session F	F1 • Regular paper
T. K. Vasileva, S. A. Stefanova	
<a href="#"><u>University Learning Approaches in Network Technologies School Education</u></a>	
Session F	F2 • Regular paper
N. Stojanović, D. Stojanović	
<a href="#"><u>A Hybrid Approach for Parallelization of Watershed Analysis Algorithm</u></a>	
Session F	F3 • Regular paper
G. Ostojić, S. Tegeltija, M. Lazarević, D. Oros, S. Stankovski	
<a href="#"><u>Implementation of IoT and FIWARE in Production Systems</u></a>	
Session F	F4 • Regular paper
A. I. Stojnev, D. H. Stojanović	
<a href="#"><u>Real-time Processing of Big Geospatial Data based on Spark Streaming</u></a>	
Session F	F5 • Regular paper
N. Simić, D. Milović	
<a href="#"><u>Watermarking Scheme based on AMBTC Compression Technique and its Robustness to Gaussian Noise</u></a>	
Session F	F6 • Regular paper
Z. Perić, B. Denić, V. Despotović	
<a href="#"><u>Delta Modulation System with a Limited Error Propagation</u></a>	

### **Session G: HYDRAULIC AND PNEUMATIC SYSTEMS**

*Chairperson: Ž. Čojbašić*

Session G	G1 • Regular paper
V. A. Blagojević, P. LJ. Janković, S. Randelović	
<a href="#"><u>Application of Digital Sliding Modes to Synchronization of the Work of Two Pneumatic Semi Rotary Drives</u></a>	

Session G	G2 • Regular paper
S. Čajetinac, D. Šešlija, M. Todorović, S. Aleksandrov <b><u>Proportional and PWM Electropneumatic Control - the Choice of Optimal Solution</u></b>	
Session G	G3 • Regular paper
J. Erić Obućina, S. Čajetinac, S. Stankovski, G. Ostojčić <b><u>Modern Solutions Management Capacity Hydraulic Pumps Using Frequency Regulation</u></b>	
Session G	G4 • Regular paper
N. N. Nedić, S. Lj. Prodanović, Lj. M. Dubonjić <b><u>Some Considerations on the Decoupling Control of TITO Systems</u></b>	
Session G	G5 • Regular paper
Ž. M. Stamenković, J. D. Petrović, M. M. Kocić, M. D. Nikodijević <b><u>Control of Fluid Flow and Heat transfer in Porous Medium</u></b>	
Session G	G6 • Regular paper
M. Kocić, Ž. Stamenković, J. Petrović, J. Bogdanović Jovanović, M. Nikodijević <b><u>Control of MHD Micropolar Fluid Flow and Heat Transfer</u></b>	

### **Session H: REMOTE CONTROL**

*Chairperson: M. Petronijević*

Session H	H1 • Regular paper
M. Tomić, M. Milošević, N. Tomić, V. Pavlović, N. D. Pavlović <b><u>Remote Control of Mechatronic Slider-Crank Mechanism</u></b>	
Session H	H2 • Regular paper
I. Gochev, G. Nadzinski, M. Stankovski <b><u>Effects of Time Delay and Loss Probability on Performance and Stability in a Networked Control System</u></b>	
Session H	H3 • Regular paper
S. Arsić, S. Stankov, N. Danković, D. B. Mitić, Z. Ičić, N. Jotović <b><u>Remote Control of Home Automation Elements</u></b>	

### **Session I: APPLIED MATHEMATICS**

*Chairperson: Z. Perić*

Session I	I1 • Regular paper
N. Danković, D. Antić, S. S. Nikolić, S. Perić, M. Milojković, M. Milovanović <b><u>New Classes of the Orthogonal Polynomials - An Overview</u></b>	
Session I	I2 • Regular paper
P. M. Rajković, M. S. Stanković, S. D. Marinković <b><u>Functions Defined by a Fractional Rodrigues Formula of Legendre Type</u></b>	
Session I	I3 • Regular paper
D. M. Milošević, A. D. Milošević, M. R. Milošević <b><u>Some Statistical Aspects of Mobile Customer Service</u></b>	

## **Session J: INDUSTRIAL AND PROCESS CONTROL**

***Chairperson: M. Milojković***

Session J	J1 • Regular paper
A. R. Gaiduk, E. A. Plaksienko, N. M. Stojković <b><u>Analytical Design of Robust Control Systems with Desirable Performances</u></b>	
Session J	J2 • Regular paper
D. Pršić, A. Vičovac, V. Stojanović <b><u>The Static Characteristic of the Evaporator Superheat Control Loop</u></b>	
Session J	J3 • Regular paper
P. R. Tadić, A. LJ. Marjanović, S. M. Vujnović, G. S. Kvaščev <b><u>Fault Diagnosis in Redundant-Sensors Schemes: A Combined Parity Relations and Dedicated Observer Approach</u></b>	
Session J	J4 • Regular paper
A. Marjanović, P. Tadić, L. Cokić, Ž. Đurović <b><u>On Possibility of Modeling the Influence of Coal Firing Process Correction on Steam Drum Outlet Temperature in Thermal Power Plant</u></b>	
Session J	J5 • Regular paper
S. Stankov, Z. Ičić, N. Jotović, D. Z. Mitić, S. Arsić <b><u>Application of Multiplexers in the Systems for Data Acquisition, Supervision and Control</u></b>	

## **Session K: ROBOTICS**

***Chairperson: S. S. Nikolić***

Session K	K1 • Regular paper
M. Kyranini, A. Leu, D. Ristic-Durrant, A. Gräser <b><u>Robot Learning of Basic Skills from Human Demonstrations</u></b>	
Session K	K2 • Regular paper
E. Petrović, V. Pavlović, M. Simonović, V. Nikolić <b><u>Fuzzy Logic Control of Differential Drive Mobile Robot for Moving Target Tracking</u></b>	
Session K	K3 • Regular paper
J.Šulc, D.Šešlija, V.Reljić, B.Bajči, S.Čajetinac <b><u>PWM Control of Coupled Motion of Two Axis Pneumatic Programmable Manipulator</u></b>	

## NeReLa WORKSHOP

*Chairperson: Ž. Đurović*

13:00 – 13:05	Welcome Address
	N. D. Pavlović
13:05 – 14:00	Invited Lecture
	R. Krneta <b>NeReLa: Past, Present and Future</b>
14:00 – 15:00	Session N-A: Joint Session with SAUM Session H
	<b>Remote Control</b>
15:00 – 18:00	Session N-B
	<b>Presentation of Remote Experiments</b>