### A1L-A  Plenary 1: Zdzisław Kowalczuk

- **Date:** Monday, August 27, 2018
- **Time:** 15:10 - 16:10
- **Room:** Casino
- **Chair:** Tadeusz Kaczorek

**An Intelligent Decision-Making System for Autonomous Units Based on the Mind Model**

Zdzisław Kowalczuk, Michał Czubenko  
*Gdańsk University of Technology, Poland*

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### A2P-E  Poster Session I

- **Date:** Monday, August 27, 2018
- **Time:** 16:30 - 17:50
- **Room:** Poster Area
- **Chair:** Paweł Dworak

**Sample Time Optimization for the Discrete Approximation of the Fractional Order Charef Transfer Function**

Krzysztof Oprzędkiewicz, Klaudia Dziedzic  
*AGH University of Science and Technology, Poland*

**Local Controllability of Discrete Semilinear Time-Varying Fractional Order Systems with Constant Delay**

Artur Babiarz  
*Silesian University of Technology, Poland*

**On the Existence of Optimal Solutions for Optimal Control Problems Involving the Caputo Fractional Derivatives with Nonsingular Kernels**

Rafał Kamocki, Kamil Pajek  
*University of Łódź, Poland*

**Minimum Energy Control of Fractional Linear Systems**

Jerzy Klamka  
*Silesian University of Technology, Poland*

**Improvement of the Torque Control Dynamics of the PMSM Drive Using the FOC-Controlled Simple Boost QZSDMC Converter**

Przemysław Siwek, Konrad Urbanski  
*Poznań University of Technology, Poland*

**Input Filter Optimisation for a DTC Driven Matrix Converter-Fed PMSM Drive**

Przemysław Siwek  
*Poznań University of Technology, Poland*

**Terminal Sliding Mode Control with Control Signal and Velocity Constraints**

Mateusz Pietrala, Marek Jaskuła  
*Lodz University of Technology, Poland*

**Model Reference Control for 2-D System**

Jerzy Kurek  
*Warsaw University of Technology, Poland*

**Adaptive Gradient-Based Luenberger Observer Implemented for Electric Drive with Elastic Joint**

Marcin Kaminski  
*Wrocław University of Science and Technology, Poland*
A3L-A  Optimal Control
Date: Monday, August 27, 2018
Time: 16:30 - 17:50
Room: Casino
Chair: Andrzej Dzieliński

Model Decomposition and Optimal Flux Control for Linear Distributed Heat Transfer Systems
Georgy Kostin\textsuperscript{1}, Andreas Rauh\textsuperscript{2}, Harald Aschemann\textsuperscript{2}
\textsuperscript{1}Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences, Russia; \textsuperscript{2}University of Rostock, Germany

Optimal PWA Approximation for a Nonlinear Car on the Hill System and Properties of the Hybrid MPC Constrained Time-Optimal Controller
Przemysław Orlowski
West Pomeranian University of Technology Szczecin, Poland

An Integro-Differential Approach to LQ-Optimal Control Problems for Heat Transfer in a Cylindrical Body
Alexander Gavrikov, Georgy Kostin
Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences, Russia

A3L-B  Identification I
Date: Monday, August 27, 2018
Time: 16:30 - 17:50
Room: Kalman
Chair: Zdzisław Kowalczuk

Continuous-Time Nonlinear Block-Oriented Dynamic System Identification from Sampled Step and Step-Like Responses
Jarosław Figwer
Silesian University of Technology, Poland

Trajectory Tracking and Nonparametric Identification of Flexible Space Robot Manipulators
Jerzy Sasiadek\textsuperscript{1}, Steve Ulrich\textsuperscript{1}, Adam Krzyżak\textsuperscript{2}
\textsuperscript{1}Carleton University, Canada; \textsuperscript{2}Concordia University, Canada

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\textsuperscript{1}ABB Corporate Research Center, Poland; \textsuperscript{2}AGH University of Science and Technology, Poland

Application of the Wavelet Transform and Lipschitz Exponent for the Evaluation of Sandwich Panel Deformations at the Support

Jolanta Pozorska\textsuperscript{1}, Zbigniew Pozorski\textsuperscript{2}
\textsuperscript{1}Czestochowa University of Technology, Poland; \textsuperscript{2}Poznań University of Technology, Poland

Analytical Steady-State Model of the Pipeline Flow Process

Zdzisław Kowalczuk, Marek Tatara
Gdańsk University of Technology, Poland

Iterative Learning Control for a Sub-Class of Uncertain 2D Systems

Bartłomiej Sulikowski
University of Zielona Góra, Poland

On Leader-Following Consensus Protocol for Positive Discrete-Time Multi-Agent Systems

Ewa Girejko, Agnieszka B. Malinowska
Białystok University of Technology, Poland

Pole-Free Perfect Control: Theory Vs. Simulation Examples

Marek Krok, Wojciech Hunek
Opole University of Technology, Poland
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Adrian Włodarczyk, Albert Kowalczyk, Jarosław Tarnawski
Gdańsk University of Technology, Poland

Automatic Control of Working Process Parameters As a Condition for Robotisation of Mining Machines
Piotr Cheluszka, Piotr Sobota
Silesian University of Technology, Poland

Practical Verification of the Advanced Control Algorithms Based on the Virtual Commissioning Methodology – a Case Study
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Silesian University of Technology, Poland

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Gdynia Maritime University, Poland

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Gdańsk University of Technology, Poland

Grey Wolf Optimizer Applied for Design Process of Off-Road Vehicle
Mateusz Kryszczak, Marcin Kaminski
Wrocław University of Science and Technology, Poland

Experimental Verification of Discrete Linear-Quadratic-Gaussian Control System of Electro-Hydraulic Servodrive
Jakub Mozaryn, Arkadiusz Winnicki, Michał Micewicz
Warsaw University of Technology, Poland

Adaptive Controller with Neural Signal Predictor Applied for Two-Mass System
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Wrocław University of Science and Technology, Poland

Independent Flight Management System for Unmanned VTOL Aircraft
Adam Sikora, Roman Czyba
Silesian University of Technology, Poland
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Date: Tuesday, August 28, 2018
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Harald Aschemann¹, Benedikt Haus¹, Paolo Mercorelli¹
¹Leuphana University of Lueneburg, Germany; ²University of Rostock, Germany

Sliding Mode Control with Time-Varying Switching Hyperplane for Data Transmission Networks
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Łódź University of Technology, Poland

Integral Sliding Mode Control and Gain-Scheduled Modified Utkin Observer for an Underground Coal Gasification Energy Conversion Process
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¹Capital University of Science and Technology, Pakistan; ²COMSATS Institute of Information Technology, Pakistan; ³IAV Development GmbH, Germany; ⁴University of Rostock, Germany

Discrete Sliding-Mode Control of Multipath TCP Networks Under Input and Output Uncertainty
Przemysław Ignaciuk, Michał Morawski
Łódź University of Technology, Poland

Sliding Mode Control of an Electromechanical Solenoid Actuator for Soft Landing
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Ozyegin University, Turkey

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AGH University of Science and Technology, Poland

Optimization of Robot Tasks by Intelligent Objects Using RFID Technology
Christian Thormann, Alexander Winkler
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Time:  15:00 - 16:20
Room:  Kalman
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Silesian University of Technology, Poland

On Impulsive Noise Suppression Techniques in Color Images
Łukasz Maliński, Bogdan Smołka
Silesian University of Technology, Poland

Research of the Equipment Calibration Methods for Fertilizers Particles Distribution by Size Using Image Processing Measurement Method
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1Kaunas University of Technology, Lithuania; 2Vytautas Magnus University, Lithuania

Classification of Vehicles in Aerial Imagery Using Deep Convolutional Neural Networks
Przemyslaw Mazurek2, Dorota Oszutowska-Mazurek1
1Pomeranian Medical University in Szczecin, Poland; 2West Pomeranian University of Technology Szczecin, Poland

B5L-C  Identification II
Date:  Tuesday, August 28, 2018
Time:  15:00 - 16:20
Room:  Lehar
Chair:  Jarosław Figwer

Nonparametric Identification of the Surgeon's Hand Vibration in Haptic Devices
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1Shahid Chamran University of Ahvaz, Iran; 2University of Calgary, Canada

Modeling and Identification of Cylindrical Bodies with Free Convection and Peltier Elements As Sources for Active Heating
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1Ishlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences, Russia; 2University of Rostock, Germany

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Andrzej Janczak
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¹Opole University of Technology, Poland; ²Opole University of Technology / University of Greenwich, Poland

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¹AGH University of Science and Technology, Poland; ²Opole University of Technology, Poland; ³Opole University of Technology / University of Greenwich, United Kingdom; ⁴Silesian University of Technology, Poland; ⁵Technical University of Ostrava, Czech Rep.; ⁶University Hospital in Opole, Poland

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