

15th International Carpathian Control Conference - Program

28th May 2014, Wednesday

16.30 – 18.30, Session W1, Chairman: Krokavec, Kozáková		16.30 – 18.30, Session W2, Chairman: Šeda, Fikar	
1.	Anna Filasova, Vratislav Hladky and Dusan Krokavec Static output control design reflecting fuzzy subsystem interactions in TS fuzzy models	1.	Milos Seda From Classical Transportation Problem to Crop Problems with Uncertainties
2.	Vojtech Vesely and Daniel Vozak Stable model predictive controller design	2.	Stanislav Vrána and Bohumil Šulc Neural Network Inference of Biomass Fuel Moisture During Combustion Process
3.	Mikulas Huba Tuning of a filtered pole assignment controller for an integral plant	3.	Ivor Dülk and Tamás Kováčsházy A Computationally Effective Method for Calculating the Exponential Fit
4.	Igor Belai and Mikulas Huba Comparison of two approaches to a positional servo control	4.	Béla Rima, József Vásárhelyi, János Végh and Jan Turán Mojette Transform implemented in Labview
5.	Dusan Krokavec and Anna Filasova Output PI control of MIMO linear continuous-time systems	5.	Dominik Sierociuk and Michal Macias Initial conditions for a recursive constant and variable fractional-order derivative and its verification based on analog model
6.	Adrian Ilka and Vojtech Vesely Discrete Gain-Scheduled Controller Design: Variable Weighting Approach	6.	Alena Vagaská, Peter Michal, Miroslav Gombár, Ján Kmec, Emil Spišák and Miroslav Badida Modelling of the Anodizing Process of Aluminum Using Neural Networks
7.	Alena Kozáková, Róbert Krasňanský and Vojtech Veselý Switched System Controller Design: the Frequency Domain Approach	7.	Karol Kostur Optimization of burner's range of tunnel furnace by simulation
8.	David Soós and Mikuláš Huba Experimental performance portrait based optimal controller tuning	8.	Roman Prokop, Jiří Korbek and Radek Matušů Autotuning for Delay Systems – An Algebraic Approach

29th May 2014, Thursday

10.30 - 12.30, Session T1, Chairman: Tůma, Kostur		10.30 - 12.30, Session T2, Chairman: Podlubný, Petráš	
1.	Michal Kašpárek Glass window vibrations analysis used for positioning of piezoelectric damping elements	1.	G. Serdar Tombul Real Time Control of a Fin Loading System
2.	Jiri Otahal and Frantisek Hruska Aspects of electromagnetic interference in range of low frequencies	2.	Igor Podlubny and Bohdan Datsko Recent advances in methods for studying and solving partial fractional differential equations
3.	Jiri Tuma, Miroslav Mahdal, Pavel Šuránek and Marek Babiuch Simulation of the parametric vibration damping	3.	Leszek Cedro Linearization and Identification a Mathematical Model of an Excavator
4.	Marcin Węgrzynowski MR damper control in an energy-harvesting vibration reduction system	4.	Ivo Petras Practical aspects for implementation of fractional-order controllers
5.	Magdalena Zawartka Sensitivity analysis of the MR damper model parameters on the vibration transmissibility characteristics	5.	Marcela Pavlickova and Ivo Petras A note on time series data analysis using a fractional calculus technique
6.	Mateusz Romaszko, Sebastian Pakuła and Jacek Snamina Composite beam's parameters identification based on frequency response	6.	Monika Žecová, Ján Terpák and Ľubomír Dorčák The Modeling of Heat Conduction Using Integer- and Fractional-Order Derivatives
7.	Beáta Stehlíková and Patrik Flegner Possibilities to compare vibration in drilling rock	7.	Michał Sobolewski and Zbigniew Koruba Optimal Control and Stabilization of the Observation- Tracking Device Placed on a Deck Of Unmanned Aerial Vehicle (UAV)
8.	Marcin Węgrzynowski Electromechanical transducers to supply an MR rotary damper: laboratory testing	8.	Paweł Dąg and Krystyn Styczeń Necessary optimality conditions for optimal control of multistage DAE systems

14.30 - 16.00, Session T3, Chairman: Šulc, Huba		14.30 - 16.00, Session T4, Chairman: Farana, Sapinski	
1.	Cyril Oswald, Viktor Plaček and Bohumil Šulc Advanced Control with Economic - Ecological Optimization for Biomass-fired Boilers	1.	Josef Cernohorsky and Marcel Horák Vertical Climber 2 - design and implementation of control algorithm
2.	Tomáš Barot and Marek Kubalčík Predictive Control of Non-Minimum Phase Systems	2.	Dean Brennan and Jan Kolaja Real Time Location System using Passive UHF RFID tags
3.	Ondřej Ježek Case study on an event model-based PID control of a thermal process	3.	Viliam Dolinay, Lucie Pivnickova and Vladimír Vasek Objectivization of traditional otonerological examinations based on Kinect sensor
4.	Miluše Vítečková and Antonín Víteček Dominance of poles for desired model method	4.	Alois Krejci, Tomas Popule and Martin Goubej Closing the motion control loops via industrial Ethernet network
5.	Pavol Bistak and Mikulas Huba Constrained Pole Assignment Control of a Two Tank System	5.	Jaroslav Antoš and Martin Bušek Client-Server Application for the operator panel Weintek and the control system Siemens Simotion
6.	Danica Rosinova and Ivan Holič LMI approximation of pole region for discrete-time linear dynamic system	6.	Balázs Scherer and Gábor Horváth Microcontroller tracing in Hardware In the Loop tests

16.30 - 18.00, Session T5, Chairman: Janota, Vasarhelyi		16.30 - 18.00, Session T6	
1.	Tamás Kovács házy and Bálint Ferencz One-way Delay Measurement System for Local Area Network Delay and Jitter Characterization	<h2>Poster session</h2> <p>(see details below)</p>	
2.	Aleksejs Zacepins and Jurijs Meitalovs Implementation of multi-node temperature measurement system for bee colonies online monitoring		
3.	Adam Wolniakowski, Piotr Koziół and Kanstanstin Miatliuk Genereting trajectory for 5 DoF serial link CNC machine with kinematic constraints		
4.	Oto Haffner Making of environment map using a laser rangefinder and library OpenCV		
5.	Miroslav Köver-Dorčo Scada System Creation by Using Java Applications and PLC		
6.	Marián Hruboš, Aleš Janota and Rastislav Pirník Road surface measurement and visualization based on data from the laser scanner.		

30th May 2014, Friday

10.30 - 12.00, Session F1, Chairman: Farana		10.30 - 12.00, Session F2, Chairman: Landryová	
1.	Marian Mrosko, Jozef Skultety and Eva Miklovicova Laguerre Network Implementation in Industrial Control Systems	1.	Václav Řepa and Ondrej Železník Methodological Limitations of Modeling Languages BPMN and ARIS
2.	Ján Pitel' and Mária Tóthová Dynamics of the Pneumatic Muscle Actuator: Measurement and Modeling	2.	Erik Kučera and Branislav Hrúz Modelling of automated storage systems using Hierarchical Coloured Petri nets
3.	Wojciech Lepiarz The vision analysis of a McKibben pneumatic artificial muscle	3.	Agata Nawrocka, Karolina Holewa and Kanstantsin Miatliuk Conceptual Design of Brain Computer Interface in the Formal Basis of Hierarchical System
4.	Dorota Marszalik Application of Haptic Omni Device to Determination of the Setpoint Trajectory	4.	Vladena Baranova, Lenka Landryová and Jozef Futo Application of multivariate planning methods in determining KPI of rock disintegration process
5.	Pavel Šuránek, Miroslav Mahdal and Jiří Tůma Modelling and Simulation of an Active Damped Structure	5.	Petr Podešva and David Fojtík Calibration of 2D scanner with nonlinearities

Poster session

Ivan Svarc Contributions to the Application of Popov and Circle Criterion for Stability Analysis	Daniel Gapiński and Izabela Krzysztofik The process of tracking an air target by the designed scanning and tracking seeker
František Vdoleček Sensor and Control Result	Iveta Onderová and Ludovít Kolláth Testing and verification of selected technological parameters of the parallel kinematic structure
Lenka Landryová and Patrik Urban A Laboratory Stand for Testing the ABS Unit Model	Milada Omachelová, Eva Kureková, Martin Halaj and Ilja Martišovič Theoretical aspects of control of the Tricept type parallel kinematic structure
Marek Babiuch .Net Microframework Gadgeteer Measurement Applications Development.	Cyril Belavý, Filip Vitáloš, Marcel Vlček, Dana Šišmišová and Marek Michalečko Robust Control Synthesis for a Class of Distributed Parameter Systems
David Fojtík Measurement of the Volume of Material on the Conveyor Belt	Anna Vasičkaninová and Monika Bakošová Control of a heat exchanger using Takagi-Sugeno fuzzy models
David Fojtík and Petr Podešva The system for measuring deformations during welding	Martin Jarčuška, Milan Žalman, Tatiana Mudráková and Pavol Varga Modelling and Effective Controlling of Radial Electromagnetic Bearings
Jolana Škutová A Web Based Application Using Matlab Builder NE for The Analysis of Linear Systems	Marian Šofranko and Róbert Zeman Simulation of pipeline transport backfill mixtures
Petr Podešva, David Fojtík and Jan Gebauer Automation of Measurement and Data Collection for Gas Filling Line	Karol Kostur Mathematical modeling temperature's fields in overburden during underground coal gasification
Michal Radecký and Pavel Smutný Evaluating user reaction to user interface element using eye-tracking technology	Marek Laciak, Ján Kačur, Milan Durdan and Patrik Flegner Application of optimization method for optimal control of the steelmaking process
Jan Nádvořník and Pavel Smutný Remote Control Robot Using Android Mobile Device	Alena Paulíková and Ondřej Železník Multicriterial Analysis of Factors Considering Intensity and Extent of Floods
Škuta Jaromír The control unit with wireless interfaces for CNC model	Ján Terpák, Pavel Horovčák, Miloš Horváth and Monika Žecová The proposal of web service for support of specific thermochemical calculation
Ales Lebeda and Petr Pivonka Comparison of Offline Identification Methods on Bounded AR Polynomial Models	Igor Leško, Patrik Flegner, Pavel Horovčák, Beáta Stehlíková and Zuzana Sabova Some Problems in Control of the Quality of the Process of Rotary Drilling of Rocks by Using Suitable Visualization of Concurrent Vibrations
Istvan Oniga and József Sütő Elder people supervision by IoT techniques	Matúš Tatarko, Ján Tóth, Luboš Ovseník, Ján Turán and József Vásárhelyi FSO availability estimation from measurements on TUKE experimental system
Bogdan Sapinski, Wojciech Horak and Andrzej Sioma Experiments on MR Fluid Behaviour in the Squeeze Mode Using the Vision Method	Pavol Liščinský and Vladimír Serbák Fault detection based on Linear Quadratic control performance in nonlinear systems
Stanislaw Flaga and Ireneusz Dominik Characteristics of the flow control valve with MSMA actuator.	Tomáš Mravec and Peter Vestenický Increasing Objects Localization Precision by Determination of Inertial Sensor Calibration Constants Using Differential Evolution Algorithm
Piotr Micek and Paweł Hammer Control system in the laboratory stand to the continuous casting of aluminum	Michal Kocúr, Stefan Kozak and Branislav Dvorscak Design and Implementation of FPGA - Digital Based PID Controller
Marcin Nawrocki and Agata Nawrocka Artificial neural networks for identification in real time of the robot manipulator model parameters	Peter Valach and Danica Rosinova Switched system robust control: pole-placement LMI based approach
Agata Nawrocka, Andrzej Kot and Marcin Nawrocki Fuzzy logic controller for rehabilitation robot manipulator	Ján Ďurech, Emília Bubeníková and Mária Franeková Security solutions of intelligent transportation system's applications with using VANET networks
Andrzej Kot and Agata Nawrocka Modeling of human balance as an inverted pendulum	Jan Halgas, Aleš Janota, Rastislav Pirník and Peter Holečko Creating a 3D parking area design via a mobile measurement platform
Łukasz Nocoń and Zbigniew Koruba Programmed Control of the Flat Track Anti-Tank Guided Missile	Dariusz Grzybek Piezoelectric generator for the power supply of the monitoring system
Agata Nawrocka and Karolina Holewa Emotiv EPOC neuroheadset in Brain – Computer Interface	

Michal Rost, Josef Smolka, Matej Mojžeš and Miroslav Virius Feature Space for Statistical Classification of Java Source Code Patterns	Boris Jobbágy, Ján Karchňák and Dušan Šimšík Rehabilitation robotics and wearable sensors as trends of home rehabilitation
Ivo Formánek, Radim Farana and Aleš Galuška Multidrive Systems in Continual Rolling Mills	Pavel Staša, Filip Beneš, Jiří Švub, Zdeněk Neustupa and Zdeněk Neustupa Jr. Monitoring and evidence of cars in private objects
Miroslav Vavroušek Pneumatic rotational engine behavior investigation and suitable control structure analysis	Martin Bušek The problem of measuring the radial cam grinder BRV 300 - CNC
Lucie Pivnickova, Viliam Dolinay and Vladimír Vasek Evaluation of static posturography via the Wii Balance Board	Domokos Kiss and Gábor Tevesz A Steering Method for the Kinematic Car using C*CS Paths
Radim Farana, Bogdan Walek, Michal Janošek and Jaroslav Žáček Fuzzy-Logic Control in Fast Technological Processes	Krzysztof Hryniów and Konrad Markowski Parallel digraph-building algorithm for polynomial realisations
Bogdan Walek, Jiří Bartoš, Cyril Klimeš and Radim Farana Fuzzy tool for conducting information security risk analysis	Sebastian Pakuła and Jerzy Michalczyk Determination of the Probabilistic Characteristics of the Coefficient of Restitution, with an Application of Acoustic Measurements
Bogdan Walek, Michal Janošek, Jaroslav Žáček and Radim Farana Adaptive Fuzzy Control of Thermal Comfort in Smart Houses	Konrad Stefański, Marta Grzyb and Łukasz Nocoń The analysis of homing of aerial guided bomb on the ground target by means of special method of control
Jaroslav Žáček and Michal Janošek Optimized Heating for Systems with Long Time Delays: A Case Study	Olga Andrianova On a state feedback anisotropy-based control problem for linear discrete-time descriptor systems
Milan Javůrek and Ivan Taufer Rigorous Using of Calibration	Arkadiy Kustov Anisotropy-based analysis and synthesis problems for input disturbances with nonzero mean
Jiří Horák, Igor Ivan and David Fojtík Large scale monitoring of public transport accessibility in the Czech Republic	Ján Vachálek, Michal Bartko and Ján Bizub Long-run On-line Identification with Hybrid Regularized Exponential Forgetting Method
Jiri Holik and Lenka Landryová Control of a general distribution system	Stella Hrehova and Erika Fechova Gain knowledge of selected properties of artificial muscles using tools of Matlab.
Lacezar Licev, Marek Babiuch and Jan Tomecek Object Recognition for Industrial Image	Nurđan Bilgin and Metin U. Salamci Determination of Optimal Feedback Gain Matrix for a Class of Nonlinear Systems
Dusan Teichmann, Michal Dorda, Jakub Vitek, Vladimír Michalik and Vladimír Smrz Unmanned Aerial Vehicles Routing Problem	Peter Ťapák and Mikuláš Huba Comparing 2DOF PI and DO-FPI controllers for the first-order plants
Michal Rusek and Filip Lorenz Simulation model for regular operation of section	Anton Pytel and Štefan Kozák Modelling and effective predictive control of gas turbine process
Tomáš Kot, Václav Kryš, Vladimír Mostýn and Petr Novák Control System of a Mobile Robot Manipulator	Jan Cigánek, Filip Noge and Stefan Kozak Trajectory tracking with variable sampling using fuzzy logic controller
Zora Jančíková, Pavel Košťal, Ondřej Zimný, Marian Kubliha, Stanislav Minárik, Marcel Poulain and Messaoud Legouera The neural network analysis of optical glasses transmittance	Mikuláš Huba, Tomáš Malatínek, Patrik Hudačko and Vladimír Popelka Laboratory model helicopter control using a lowcost Arduino hardware
Ivo Špička, Milan Heger and Ondřej Zimný Programmable Logic Controllers and Transient Heat Models	Vladimír Popelka A self stabilizing platform
Darja Noskievičová, Kateřina Brodecká and Miroslav Mahdal SW Support for CCC and CQC Control Charts	Tomáš Mikluščák and Aleš Janota How to Predict Location in Smart Environment and for What to Use It?
Vladislav Vancura, Lukas Otte, Roman Danel and Dagmar Letavkova Mine gas monitoring data analysis	Tomáš Mravec and Peter Vestenický Increasing Objects Localization Precision by Determination of Inertial Sensor Calibration Constants Using Differential Evolution Algorithm
Dagmar Letavkova, Simona Matuskova and Vladislav Vancura Airport Effectiveness Modelling	