

Program of the Measurement 2021 Conference

Online, 17-19 May 2021, Smolenice Castle, Slovakia

Monday 17. 5. 2021 9:00 CEST Conference Opening

Chairpersons: J. Manka (Slovakia)
J. Svehlikova (Slovakia)

Monday 17. 5. 2021 9:15 CEST Keynote Lecture I

Chairman: R. Rosipal (Slovakia)

Time Authors and Title

9:15 *Peter Tino*
Interpretable Machine Learning - Learning to Represent and Understand Data Structures in Space and Time

Monday 17. 5. 2021 10:15 CEST Theoretical Problems of Measurement

Chairmen: M. Paluš (Czech Republic)
V. Witkovský (Slovakia)

Time Authors and Title

10:15 *Anna Krakovská*
Cross-predictions in the Search for Effective Connectivity in Brain

10:30 *Martina Chvosteková*
A Measure of Prediction Precision for Granger Causality Analysis

10:45 *Jozef Jakubík*
Handling Fluctuating Observability of the Rössler System

11:00 *Andrej Krafcik, Peter Babinec, Ivan Frollo*
Computational Study of Magnetic Particle Alignment in External Magnetic Field Under the Influence of Viscous and Brownian Torques

11:15 *Yurii Kuts, Orest Kochan, Iuliia Lysenko, Ruslana Huminilovych*
Methodology for Measuring Phase Shifts of Signals Using Discrete Hilbert Transform

11:30 *Viktor Witkovský, Gejza Wimmer*
Exact Confidence Intervals for Parameters in Linear Models With Parameter Constraints

Monday 17. 5. 2021 13:00 CEST Keynote Lecture II

Chairman: J. Manka (Slovakia)

Time Authors and Title

13:00 *Isabel Van Driessche*
Nanocomposites: from Theory to Applications

Monday 17. 5. 2021 13:45 CEST Measurement of Physical Quantities I

Chairpersons: I. Van Driessche (Belgium)
J. Manka (Slovakia)

Time Authors and Title

13:45 *Filip Vaverka, Milan Smetana, Daniela Gombarska, Ladislav Janousek*
Nondestructive Evaluation of Conductive Biomaterials Using Sweep Frequency Eddy Current Testing

14:00 *Melinda Majerová, Anna Prnová, Jozef Kraxner, Beata Pecušová, Simona Randáková, Alfonz Plško, Dušan Galusek*
Determination of Physical Properties of Bi-doped CaO-Al₂O₃-SiO₂ Glasses

Monday 17. 5. 2021 14:30–15:30 CEST Measurement of Physical Quantities - Posters I

Chairman: D. Gogola (Slovakia)

Room Authors and Title

P1.1 *Przemysław Otomański*
The Application of Lab VIEW Environment in Light Flicker Severity Studies Using Optotypes

P1.2 *Grzegorz Wiczynski*
The Dependence of the Pst Indicator on the Rectangular Modulating Signal Frequency for Sinusoidal Voltage in the Power Grid

P1.3 *Grzegorz Wiczynski*
Description of Voltage Variation in Power Grids on the Basis of Voltage Fluctuation Indices

P1.4 *Michal Dzuris, Norbert Grilli, Imrich Szolik, Jozef Hallon*
Radiation Pattern Antenna System Measurement

P1.5 *Miroslav Gutten, Peter Brncal, Daniel Korenciak, Jozef Kudelcik*
Measurement of Parameters for Transformer Insulating System Oil-Paper by Frequency Method

P1.6 *Oleg Chernoyarov, Alexey Glushkov, Kaung Myat San, Vladimir Litvinenko, Yuliya Litvinenko*
High-Speed Digital Signal Integrator

Chairman: A. Krafcik (Slovakia)

Room Authors and Title

P2.1 Arman Bzhishkian, Arnolds Ubelis

Advanced Hardware and Software for the Upgrade of Mirror/Prisma Monochromator SPM-2 (Carl Zeiss Jena) for the Measurements of Basic Spectroscopic Properties of Atoms in Near VUV, Far UV, UV Spectral Region

P2.2 Matej Kubis, Miroslav Gutten, Daniel Korenciak

Test Equipment for Measurement of Current Waveforms of Fuel Systems in Petrol Vehicles

P2.3 Peter Brncal, Miroslav Gutten, Daniel Korenciak

Measuring and Diagnostic System of Distribution Transformers

P2.4 Tatiana Kelemenová, Miroslav Dovica, Tomáš Stejskal, Teodor Tóth, Ivana Koláriková, Ondrej Benedik

Evaluation of Distance Sensor for Length Measurement Device

P2.5 Orest Kochan, Wei Siwei, Jun Su, Krzysztof Przystupa, Mykola Beshley, Ivan Demydov, Mariana Levkiv, Ihor Likhnovskiy, Pavlo Hamula

Modeling the Process of Testing the State of Thermocouple Legs During Operation

Tuesday 18. 5. 2021 9:00 CEST Keynote Lecture III

Chairman: I. Bajla (Slovakia)

Time Authors and Title

9:00 *Genadij Ososkov*
Modern Methods of Measurement Data Processing for Experimental Physics in the Era of Machine Learning

Tuesday 18. 5. 2021 10:00 CEST Young Investigator Award Session I

Chairmen: P. Tino (UK)
A. Satka (Slovakia)

Time Authors and Title

10:00 *Yang Jin, Zili Li*
Eliminating Speckle Noises for Laser Doppler Vibrometer Based on Empirical Wavelet Transform

10:15 *Zuzana Rošťáková, Roman Rosipal*
Factor Number Selection in the Tensor Decomposition of EEG Data: Mission (Im)possible?

10:30 *Beata Ondrusova, Jana Svehlikova, Milan Tysler, Peter Tino*
Significance of Multi-lead ECG Electrodes Derived from Patient-specific Transfer Matrix

10:45 *Hana Krakovská, Anna Krakovská*
Problems of Estimating Fractal Dimension by Higuchi and DFA Methods for Signals that are a Combination of Fractal and Oscillations

11:00 *Hamed Farahani*
Comparison of MFDFA and Chhabra & Jensen Method on Multifractal and Monofractal Data

Tuesday 18. 5. 2021 11:30–12:00 CEST Theoretical Problems of Measurement - Posters III

Chairman: J. Jakubik (Slovakia)

Room Authors and Title

P3.1 *Piotr Kuwałek*
Comparison of the Estimation Errors of Parameters Associated with Individual Voltage Fluctuations Sources Using Selected Decomposition Methods

P3.2 *Gejza Wimmer, Viktor Witkovský*
Determination of the Exact Confidence Intervals for Parameters in a Model of Direct Measurements with Independent Random Errors

P3.3 *Krzysztof Dziarski*
Selection of the Observation Angle in Thermography Temperature Measurements with the Use of a Macro Lens

Tuesday 18. 5. 2021 13:00 CEST Keynote lecture IV

Chairman: M. Tysler (Slovakia)

Time Authors and Title

13:00 *Robert Hatala*

Concealed Diagnostic Contents of the ECG Revisited: Role of New Technologies

Tuesday 18. 5. 2021 14:00 CEST Measurement in Biomedicine I

Chairpersons: Y. Serinagaoglu (Turkey)
M. Tysler (Slovakia)

Time Authors and Title

14:00 *Yesim Serinagaoglu Dogrusoz, Jan Zelinka, Jana Svehlikova*

Comparison of Dipole-Based and Potential-Based Inverse ECG Solutions for the Localization of Ventricular Pacing Sites

14:15 *Elena Cocherová*

Activation Propagation in Cardiac Ventricles Using the Model of the Normal and Disrupted Conduction System

14:30 *Arkadiusz Hulewicz*

Measurements of Arterial Oxygen Saturation in the Presence of the Disturbing Factors

14:45 *Jiří Přibíl, Anna Přibílová, Ivan Frollo*

PPG Signal Measurement in Weak Magnetic Field by a Wearable Sensor

Chairperson: J. Svehlikova (Slovakia)

Room Authors and Title

- P4.1 *Arkadiusz Hulewicz, Krzysztof Dziarski*
Steady State Visual Evoked Potentials SSVEP in Brain-Computer Interfaces
- P4.2 *Veronika Malyško, Vitalij Novickij, Augustinas Želvys, Austėja Balevičiūtė, Irutė Girkontaitėukšė, Aukse Zinkevičienė*
Measurement and Evaluation of Electric Pulse Parameters to Improve Efficacy of Electrochemotherapy
- P4.3 *Iurii Venglovskiy*
Single-Voxel Proton MR-Spectroscopy Signal Analysis by Fingerprinting
- P4.4 *Eduard A. I. Aidu, Vladimir G. Trunov*
Biophysical Characterization of Integral Vectorcardiographic Parameters
- P4.5 *Qi Qi, Ge Jian Hui, Zhang Guang, Yu Ming, Chen Feng*
A Transthoracic Impedance Measurement System Applied To External Automatic Defibrillators
- P4.6 *Ege Ozkoc, Elifnur Sunger, Kutay Ugurlu, Yesim Serinagaoglu Dogrusoz*
Prior Model Selection in Bayesian MAP Estimation-Based ECG Reconstruction
- P4.7 *Fedor Lehocki, Ana Madevska Bogdanova, Milan Tysler, Beata Ondrusova, Monika Simjanoska, Bojana Koteska, Magdalena Kostoska, Martin Majak, Miroslav Macura*
SmartPatch for Victims Management in Emergency Telemedicine

Wednesday 19. 5. 2012 9:00 CEST Young Investigator Award Session II

Chairpersons: B. Kessel (Germany)
A. Satka (Slovakia)

Time Authors and Title

- 9:00 *Igor Zakharov, Pavel Neyezhnikov, Valery Semenikhin*
Identification of Non-Polynomial Calibration Dependence Accounting for Instrumental Uncertainties of Measuring Instruments
- 9:15 *Krzysztof Dziarski, Arkadiusz Hulewicz*
Components of Uncertainty of Thermography Temperature Measurements with the Use of a Macro Lens
- 9:30 *Piotr Kuwałek*
Influence of Voltage Variation on the Measurement of Total Harmonic Distortion (THD) by AMI Smart Electricity Meters
- 9:45 *Marta Jarak, Krešimir Malarić, Bosiljka Šaravanja, Tanja Pušić*
Impact of Washing on Shielding Effectiveness of Stainless-Steel Textile Fabric
- 10:00 *Jan Gombos, Lucia Balejcikova, Marianna Batkova, Peter Kopcansky, Oliver Strbak*
Destructive Activity Analysis of Ferritin Derivatives on Lysozyme Amyloid Fibrils

Wednesday 19. 5. 2021 10:45 CEST Measurement in Biomedicine II

Chairmen: O. Kochan (Ukraine)
I. Frollo (Slovakia)

Time Authors and Title

- 10:45 *Maros Smondrk, Andrea Jandurova, Stefan Borik, Branko Babusiak*
Design of Instrumented Glove for Hand Motion Evaluation
- 11:00 *Lukian Anatyshuk, Orest Kochan, Natalia Pasechnikova, Volodymyr Naumenko, Oleg Zadorozhnyi, Ludmila Vikhor L.M., Mykola Havryliuk, Roman Kobylanskyi, Mariana Levkiv*
Thermoelectric Medical Device for Measuring Heat Flux From Ocular Surface
- 11:15 *Štefan Harďoň, Jozef Kúdelčík, Miroslav Gutten*
The Acoustic Spectroscopy of Biocompatible Fluid in a Magnetic Field
- 11:30 *Roman Radil, Jan Barabas, Ladislav Janoušek, Patrik Kamencay*
Investigation of Magnetic Flux Density Variation Influence on Biological Response of Cell Cultures
- 11:45 *Michal Teplan, Hoang VuViet, Martin Bereta, Ivan Bajla*
Measurement System for Monitoring of Magnetic Field Effects on Yeast Cells by Impedance Spectroscopy

Wednesday 19. 5. 2021 13:00 CEST Measurement of Physical Quantities II

Chairmen: B. Antic (Serbia)
M. Hain (Slovakia)

Time Authors and Title

13:00 *Wei Siwei, Orest Kochan, Krzysztof Przystupa, Mykola Beshley, Jun Su, Mariana Levkiv, Viktor Kuts, Iryna Petrovska*
Modeling the Process of Determination of the Instantaneous Error of the Thermocouple During Operation

13:15 *Petr Raichl, Petr Marcon*
An IoT-Based Datalogger of Environmental Values

13:30 *Maciej Malinowski, Krzysztof Kubiczek, Marian Kampik, Krzysztof Musioł, Michał Grzenik, Kordian Dudzik and Wiesław Domański*
A Precision Coaxial Low-Current Shunt with Improved Mathematical Model

13:45 *Przemysław Otomański, Eligiusz Pawłowski, Anna Szlachta*
Use of a Virtual Instrument for Measurements of Direct Voltages in the Presence of Interferences

14:00 *Uldis Bērziņš*
Combination of 3 Different Measurements: Branching Fractions, Radiative Lifetimes, and Absorption Oscillator Strengths- a Good Opportunity for the Analysis of the Presence of Elements in Astrophysical Objects

Wednesday 19. 5. 2021 14:30 CEST Measurement of Physical Quantities III

Chairmen: P. Otomanski (Poland)
M. Bittera (Slovakia)

Time Authors and Title

14:30 *Aleksandr Ostantkov, Kaung Myat San, Oleg Chernoyarov, Serguei Pergamenchtkhikov*
Potentially Achievable Levels of Lateral Radiation of an Equal-Amplitude Nonuniformly-Filled Array

14:45 *Martin Mierka, Rene Hartansky*
Minimalization of a TEM CELL

15:00 *Jakub Krchnak, Rene Hartansky, Norbert Grilli*
UHF DTV Antenna System Diagnostics by Radiation Pattern Measuring

15:15 *Tomáš Hejtmánek, Zdeněk Roubal*
Hysteresis Loop Measurement for Small Closed Material Samples

15:30 *Norbert Pomp, Pavel Klouček*
Longer Parts Coefficient of Thermal Expansion Measurement Method

Wednesday 19. 5. 2021 16:00 CEST Announcement of Young Investigator Award Winners

Chairman: A. Satka (Slovakia)

Wednesday 19. 5. 2021 16:15 CEST Closing Ceremony

Chairpersons: J. Manka (Slovakia)
J. Svehlikova (Slovakia)