

Abstracts of the  
**Fifth International PhD, DLA Symposium**

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Publisher Responsible: Dr. Bálint Bachmann DLA

Technical Editor: Adam Schiffer

ISBN 978-963-7298-34-9

Printed at  
Rotari Press, Komló, Hungary

# Fifth International PhD, DLA Symposium

University of Pécs  
Pollack Mihály Faculty of Engineering



19-20, October 2009  
Pécs, Hungary



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## Time Table

### 19. October, (Monday)

- 8:00 - 10:00 Registration
- 10:00 - 10:30 Opening Session
- 10:30 Symposium Photo
- 10:30 - 11:00 Café Break and Poster Session
- 11:00 - 12:30 Plenary Session
- 12:30 - 13:30 Lunch
- 13:30 - 15:00 Session 1 (I1, E1, A1)
- 15:00 - 15:30 Café Break
- 15:30 - 17:30 Session 2 (I2, E2, A2)
- 19:00 - 23:00 Conference Dinner (Cellarium Restaurant)

### 20. October, (Tuesday)

- 8:30 - 10:30 Session 3 (I3, E3, A3)
- 10:30 - 11:00 Café Break
- 11:00 - 13:15 Session 4 (I4, E4, A4)
- 13:15 - 13:30 Closing Session
- 13:30 - 14:30 Lunch

The presentation time is 10 minutes, followed by 5 minutes for discussions.

## Technical Program

### Opening Session

**Chairman: Prof. Miklos IVANYI**

- Welcome Speech by Dr. Bálint BACHMANN, Dean of Pollack Mihály Faculty of Engineering, University of Pécs
- Welcome Address by Prof. Róbert GABRIEL, Rector, University of Pécs
- Greetings by Prof. Oszkár BÍRÓ, University of Graz

### Plenary Session

**Chairman: Prof. Miklos IVANYI**

- Dr. Jenő BALOGH (USA): *Recent Research in Wood-Concrete Composite Structures*
- Prof. A. POKROVSKII and A. Prof. D. RACHINSKII (Ireland): *Emergent hysteresis behaviour in systems with Devil's staircase input-output relationship*
- Prof. Y. CENGIZ TOKLU (Turkey): *Solving structural systems by total potential optimization*

### Poster Session

**Chairman: Dr. Tibor KUKAI**

- Erzsébet BACHMANN (Hungary): *Children's toys - Art education for students of architecture*
- Edina NÁDOR (Hungary): *Space experience - Connection between architecture and sculpture*
- Balázs KERTÉSZ (Hungary): *Holiday home located at the bank of the river Danube*

## Session INFORMATION TECHNOLOGY

### Session I1

Chairmen: Jaroslav KRUIS, Géza VÁRADY

- Ildiko JANCSKAR (Hungary): *Thermograms in the fuzzy scale-space*
- Gergely BARTA (Hungary): *A new generation of natural gas measurement systems*
- Robert KLINC (Slovenia): *ICT enabled communication in construction 2.0*
- Gyula PAPP (Hungary)
- Bence MOLNÁR (Hungary): *Developing a web based photogrammetry software using DLT*
- Istvan Ervin HABER (Hungary): *Determination of the heat transfer coefficient by pitched and flat roofs mounted PV modules*

### Session I2

Chairmen: Elena HELEREA, Gyorgy KOVACS

- Gergely NYITRAY (Hungary): *Modeling of Electromagnetic Wave propagation in One-dimensional Photonic Crystals*
- Imre PANITI (Hungary): *Novel one machine based dieless Incremental Sheet Forming*
- Anett NAGYVÁRADI (Hungary): *Producing periodic poled LiNbO<sub>3</sub> by e-beam*
- Péter MEGYERI (Hungary): *Radiation peculiarities of wireless devices*
- Adrian Marian MATOI (Romania): *Simulations on High Frequency Electromagnetic Screens*

- MUSAT, Radu (Romania): *Modelling and Simulation of the PTC Heater in Automotives*

### Session I3

Chairmen: Barry TOPPING, Peter IVANYI

- Giorgio DE PASQUALE (Italy): *MEMS for Sensors and RF Applications: Dynamic Design and Methods for Reliability Assessment*
- Andrea MURA (Italy): *Influence of the viscoelastic FLD patches disposition on damping performances of steel plates*
- János RADÓ (Hungary): *Investigation of the reliability of the gradient smoothing technique*
- Eszter GERESICS-FÖLDI (Hungary): *Multigrid in lineal Laplace equation*
- Stefan AUßERHOFER (Austria):  *$\mathbf{T}, \Phi$ - $\Phi$ -Formulation with discontinuous shape functions for eddy current problems*
- Jaroslav BROZ (Czech Republic): *Selection strategy for corner nodes in FETI-DP Method*
- Chao CHEN (Austria): *Edge Element Multigrid for Time-Harmonic 3-D Eddy-Current Problems*
- Géza VÁRADY (Hungary): *Non-additivity errors in mesopic photometry*

## Session I4

Chairmen: Oszkar BÍRÓ, Dimitrii RACHINSKII

- Attila SIPEKY (Hungary): *Stress dependent magnetic characteristic of reinforcing bars*
- Razvan Mihai IONESCU (Romania): *General description of the current state of induction machines noise*
- Nimród Dénes KUTASI (Romania): *Explicit model predictive control of three-phase PWM rectifiers*
- Mariana SERBAN (Romania): *Comparative Analysis upon Electrical Breakdown Voltages of Vegetal and Mineral Transformer Oils*
- Daniel CALIN (Romania): *Loss Analysis in the Magnetic Circuit of Electrical Machines*
- Balázs TUKORA (Hungary): *Prediction of cutting forces during the GPGPU-based material removal simulation*
- Zoltan SARI (Hungary): *Investigation of the behavior of a complex system by a component-based modeling approach*
- Adam SCHIFFER (Hungary): *Measurement and processing of the vibration signal of transformer sheets*

## Session ENGINEERING

### Session E1

Chairmen: László HEGEDÜS, Richard POZZI

- Michal NETUSIL (Czech Republic): *Behaviour of the glued joint in hybrid steel-glass beam*
- Ondrej JIRKA (Czech Republic): *Semi-Rigid Joints of Timber Structures*
- Zoltán MEISZTERICS (Hungary): *Laser welding of steels with divided beam*
- Jiri JIRAK (Czech Republic): *Small Steel Bridge Behaviour*
- Géza Cs. NAGY (Hungary): *A possible way to improve the maintenance activity in reference to military vehicles in the Hungarian Army*
- Mokul BORA C. (Hungary): *Experimental studies on bearing capacity of stone column and encased stone column foundation bed*

### Session E2

Chairmen: Aarne JUTILA, Aniko CSEBFALVI

- István VÖLGYI (Hungary): *Determination of strength of spun-cast concrete elements*
- Monika NAGYOVÁ (Slovakia): *Problems of Self-Supporting Form for the Production of Prestressed Concrete Prefabricated Elements*
- Anita FÓDI (Hungary): *Comparison of Shear Behaviour of Masonry Walls with and without Reinforcement*
- ORBAN, Zoltan (Hungary): *Assessment of masonry arch bridges using non-destructive in-situ testing methods*
- Djurdjica MATOŠEVIĆ (Croatia): *Experimental tests of confined masonry walls*

- István SZŰCS (Hungary): *The Role of Host Rock Absorption Tomography in Waste Disposal Research*
- Ágoston WINKLER (Hungary): *Collecting Public Transport Passenger Preferences Online*

### Session E3

**Chairmen: Y. Cengiz TOKLU, Marta DOLEZALOVA**

- Neira TORIC MALIC (Croatia): *Dynamic Analysis of Long Structures Supported by the Ground under Moving Loading by Finite Strip Method*
- Krunoslav MINAZEK (Croatia): *Measurement of soil-grid interaction in pullout*
- Osman KARA (Turkey): *Correlation between CPT and SPT in Adapazari, Turkey*
- Matej GUZIK (Slovakia): *Grouting Effect on Micropile Bearing Capacity*
- Adam UNGVARAI (Hungary): *Developing the TransPLAN pattern-based design environment*
- Dániel SÁNDOR (Hungary): *Use of nanotechnologically constructed microreactors in MBR wastewater treatment system*
- Adrienn HORVÁTH (Hungary): *Roof runoff quality and reduction possibility of the pollutants*
- Katarína CIPOVOVÁ (Slovakia): *Flood risk management in Slovakia*

### Session E4

**Chairmen: Ivica GULJAS, Peter TURCEK**

- Réka SZABÓ (Hungary): *Transformation of the Forests of Béda Region*

- Tibor PÉCZ (Hungary): *Conservational and Hydrological Problems of Lake Riha*
- Éva FETTER (Hungary): *Implementation of a monitoring system on the ecological effects of anthropogenic interventions on the Danube morphology for the Gemenc-Béda-Karapanca floodplain*
- Ivan MRNCO (Slovakia): *Hydroinformatics and water supply management*
- Abbas KAVIANI (Iran): *Estimation of Daily Crop Evapotranspiration in High Resolution Images with Developed UpScaling-Downscaling Algorithm*
- Sándor LAKY (Hungary): *Using the Differential Evolution Algorithm for Processing Star Camera Measurements*
- Attila BERÉNYI (Hungary): *Laserscanning in engineering survey – an application study*
- Tamas TUCHBAND (Hungary): *Evaluation of the EGNOS Troposphere Model in Precise Point Positioning Applications*

## Session ARCHITECTURE

### Session A1

**Chairmen: Gyorgy KOVACS, István KISTELEGGI Jr.**

- BEDE, István (Hungary): *Un exemple contemporain de renouvellement urbain en France : le quartier Paris Rive Gauche*
- Sarolta GAÁL (Hungary): *The Interior Design of the Science Building*
- Réka HEIDENREICH (Hungary): *Wirtschaftliche Krisenregionen in Deutschland und in Ungarn*
- Viktória BARACSI (Hungary): *Urban rehabilitation of Hungary*

- Dániel BIANKI (Hungary): *Mine called from Earl István Széchenyi, Energy of the past is the question of the future*
- Katalin VÉRTES (Hungary): *Refurbishment and re-application of chain bridges in the 21th century*

## Session A2

Chairmen: **Bálint BACHMANN, Erzsébet ZOLTÁN**

- Andras VOLENTICS (Hungary): *Conservation of cultural and natural heritage*
- Tamás MOLNÁR (Hungary): *The Reconstruction of the Archaeological Museum in Pécs*
- Erika VÖRÖS (Hungary): *Reconstruction of the Archaeological Museum in Pecs*
- Balázs KÓSA (Hungary): *Disposing the Indóház Square and it's Surroundings*
- Ákos LEPSÉNYI (Hungary): *The remodeling of a national monument building in Pécs*
- Richárd TÜDŐ (Hungary): *Modern Art Gallery*
- Peter KONTRA (Hungary): *A rijekai történeti kikötő revitalizációja Rijeka, Croatia*

## Session A3

Chairmen: **Anna Mária TAMAS, Andor Krisztián KOVÁCS**

- Janos GYERGYAK (Hungary): *Classroom Future Students*
- Sándor TÁRKÁNYI (Hungary): *Analytical Aspects for Floor Plan Structures of Residential Buildings*
- György HALÁSZ (Hungary): *Case Study on Architectural Design of a Glass Roof, Review of Other Glazed Structures*

- SZTRANYÁK, Gergely (Hungary): *New public space strategies*
- Tamás PETHES (Hungary): *Home for the elderly in Kővágószőlős*
- Szabolcs Zoltán GONDOS (Hungary): *Let's make a real public place*

#### Session A4

**Chairman: Amalia IVANYI**

- Réka FERENCZHALMY (Hungary): *Activity and intentionality as linguistic markers of agency: measuring in-group versus out-group activity and intentionality in Hungarian historical narratives*
- Blanka LANG (Hungary): *A hybrid method for the resource-constrained project scheduling problem with discounted cash flows*
- Ákos GOCSÁL (Hungary): *An analysis of the digital divide among the students of the Pollack Mihály Faculty of Engineering*
- István FODOR (Hungary): *Information, information-technology and criminal law<sup>19</sup>*
- Etelka SZENDRŐI (Hungary): *Multi-mode harmony search algorithm for resource-constrained project scheduling problem*

## International Scientific Committee

### Chairman:

Balint BACHMANN - Dean, University of Pécs, Pollack Mihály Faculty of Engineering

### Members:

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## Organizing Committee

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## Foreword

The Fifth International PhD & DLA Symposium is organized in 2009 because it is thought that PhD & DLA students need a special forum in addition to their PhD & DLA programmes to present the results of their ongoing research. On the other hand the results should be discussed collecting proposals how to continue. The First, Second, Third and Fourth International PhD Symposia were organized in 2005, 2006, 2007, 2008 and it will be important to continue this tradition.

### *Objectives of the PhD & DLA Symposium*

- to provide a forum for PhD & DLA students in engineering to present the progress of their work,
- to discuss the results of the ongoing PhD & DLA studies in order to support the future activity,
- to give the opportunity for PhD & DLA students to establish contact for international communication,
- to compare PhD & DLA studies in various countries.

System of this symposium is to have oral presentations by the & DLA PhD students themselves, which are immediately followed by discussions that are scheduled in the programme. Main results of the studies are summarized in the Pollack Periodica (An International Journal for Engineering and Information Sciences) published by Akadémiai Kiadó.

All of the abstracts and papers will be reviewed by the members of the Scientific Committee.

On behalf of the Organizing Committee, I would like to express the thanks to the University of Pécs, Pollack Mihály Faculty of Engineering for hospitality of the Symposium.

Prof. Miklos Ivanyi