

# *Předběžný program*

## *Preliminary Program*

48<sup>th</sup> International Scientific Conference

# **E**xperimentální **A**nalýza **N**apětí **2010** *Experimental Stress Analysis*

Wellness hotel Diana, Velké Losiny, Czech Republic  
May 31<sup>st</sup> – June 3<sup>rd</sup>, 2010

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SPOLEČNÁ LABORATOŘ OPTIKY UNIVERZITY PALACKÉHO  
A FYZIKÁLNÍHO ÚSTAVU AKADEMIE VĚD ČESKE REPUBLIKY

PŘÍRODOVĚDECKÁ FAKULTA UNIVERZITY PALACKÉHO V OLOMOUCI

ČESKÁ SPOLEČNOST PRO MECHANIKU



<b>31. 5. 2010</b>	<b>Pondělí / Monday</b>
15:00 – 21:00	Registrace účastníků / Registration of Participants
18:00 – 20:00	Večeře / Welcome Dinner
<b>1. 6. 2010</b>	<b>Úterý / Tuesday</b>
07:00 – 09:00	Snídaně / Breakfast
08:00 – 12:00	Registrace účastníků / Registration of Participants
09:00 – 09:15	Zahájení konference / Opening Ceremony
09:15 – 10:45	Úvodní přednášky / Plenary Session
10:45 – 11:00	Občerstvení / Coffee Break
11:00 – 11:45	Prezentace sponzorů / Sponsors Presentation
12:00 – 13:30	Oběd / Lunch
13:30 – 15:30	Jednání v sekcích / Parallel Sessions
15:30 – 15:50	Občerstvení / Coffee Break
15:50 – 17:50	Jednání v sekcích / Parallel Sessions
18:00 – 20:00	Večeře / Dinner
<b>2. 6. 2010</b>	<b>Středa / Wednesday</b>
07:00 – 09:00	Snídaně / Breakfast
08:30 – 09:50	Jednání v sekcích / Parallel Sessions
09:50 – 10:10	Občerstvení / Coffee Break
10:10 – 11:30	Jednání v sekcích / Parallel Sessions
11:30 – 13:00	Oběd / Lunch
13:00 – 18:30	Exkurze / Excursion
19:30 – 23:00	Banket / Banquet
<b>3. 6. 2010</b>	<b>Čtvrtek / Thursday</b>
07:00 – 09:00	Snídaně / Breakfast
08:30 – 10:30	Jednání v sekcích / Parallel Sessions
10:30 – 10:50	Občerstvení / Coffee Break
10:50 – 12:50	Jednání v sekcích / Parallel Sessions
12:50 – 13:00	Ukončení konference / Closing Ceremony
13:00 – 14:00	Oběd / Lunch

## Podrobný program konference

### Detailed Program of the Conference

Úterý 1. 6. 2010 / Tuesday June 1<sup>st</sup>, 2010

Kavárna / Coffee Room

1. 6. 2010

09:00 – 12:00 | Chairman: *prof. Ing. František Plánička, CSc.*

09:00	Zahájení konference / Opening Ceremony	
09:15	<i>Miroslav Okrouhlík:</i> Stress energy flow. Synergy of experimental and finite element treatments	Úvodní přednášky / Plenary Session
9:45	<i>Stanislav Holý:</i> International Contacts and Activities of Czech Society for Mechanics in the field of Experimental Mechanics	
10:15	<i>František Plánička:</i> Dimensional Analysis and Modeling in Mechanics of Solids	
10:45	Občerstvení / Coffee Break	
11:00	<i>Holger Müller:</i> Genesis Highspeed technology from HBM	Prezentace sponzorů / Sponsors Session
12:00	Oběd / Lunch	

Kavárna – Sekce 1 / Coffee Room – Section 1

1. 6. 2010

13:30 – 15:30 | Chairman: *prof. Ing. Nikolaj Ganev, CSc.*

13:30	<i>Nikolaj Ganev:</i> Effect of Machining Conditions on Residual Stresses due to Milling
13:50	<i>Kamil Kolařík:</i> About the Capability of X-ray Diffraction Technique for Diagnostics of Technological Residual Stresses
14:10	<i>Milan Jary:</i> The Study of the Possibilities of Residual Stresses Prediction in Weld Joint Using the Elastic-viscoplastic Material Model
14:30	<i>Petr Bohdan:</i> Residual Stress Analysis Using ION-C Device
14:50	<i>Adam Civiň:</i> Assessment of Incremental Strain Method Used for Residual Stress Measurement by Ring-core Method
15:10	<i>Karel Vítek:</i> Theory of Stress State Identification after Hole-drilling Method Application, Sensitivity Gain of the Hole Drilling Method for Stress State Identification
15:30	Občerstvení / Coffee Break

15:50 – 18:00 | Chairman: *prof. Ing. Pavel Macura, DrSc.*

15:50	<i>Pavel Procházka:</i> Contactless Operational Identification of Turbine Blade Stress and Vibration
16:10	<i>Aleš Lufinka:</i> Measurement Static and Dynamic Characteristic Automobile Seats
16:30	<i>Jiří Petříček:</i> Simulation Model of Car Seat and Its Verification Using Platform with Six Degrees of Freedom
16:50	<i>Aleš Volek:</i> Optical Methods in Use by Experimental Strain Measurement
17:10	<i>Radim Halama:</i> An Industrial Application of a Method for Spatial Motion Measurement
17:30	<i>Petr Koudelka:</i> Original Experimental Equipment for Slow Processes of Lateral Pressure in Granular Masses
18:00	Večeře / Dinner

*Lovecký salonek – Sekce 2 / Hunting Lounge – Section 2*      **1. 6. 2010**

**13:30 – 15:30** | **Chairman:** *prof. Ing. RNDr. Mgr. Jozef Sumec, DrSc.*

<b>13:30</b>	<i>Luboš Pazdera:</i> <b>Measuring of Concrete Properties during Hardening</b>
<b>13:50</b>	<i>Luboš Pazdera:</i> <b>Monitoring of Cement-Based Material Solidification, Focusing on Electrical Properties</b>
<b>14:10</b>	<i>Ondřej Zobal:</i> <b>Change of Material Properties of the Cement Paste CEM I</b>
<b>14:30</b>	<i>Pavel Padevět:</i> <b>Measuring of Creep Cement Paste CEM II</b>
<b>14:50</b>	<i>Pavel Padevět:</i> <b>Material Properties of a Gypsum Block Exposed to Influence of Weather</b>
<b>15:10</b>	<i>Andrea Wilczynská:</i> <b>Determination of Compressive and Bending Strength of Hardened Gypsum</b>
<b>15:30</b>	<b>Občerstvení / Coffee Break</b>

**15:50 – 18:00** | **Chairman:** *prof. Ing. Luboš Pazdera, CSc.*

<b>15:50</b>	<i>Pavel Tesárek:</i> <b>Mechanical Properties of Gypsum Blocks After Fire</b>
<b>16:10</b>	<i>Tomáš Plachý:</i> <b>Nondestructive Determination of Young's Modulus of Gypsum Specimens Using Impulse Excitation Method</b>
<b>16:30</b>	<i>Jitka Němečková:</i> <b>Effect of Surface Treatment on the Microstructure of Cement Paste Assessed by AFM</b>
<b>16:50</b>	<i>Jiří Němeček:</i> <b>Micromechanical Properties of Hen's Eggshell Determined by Nanoindentation Technique</b>
<b>17:10</b>	<i>Jozef Sumec:</i> <b>Experimental Tests of the Deformation and Consolidation Properties of the Cohesive Soils and Their Use in the Geotechnical Calculations</b>
<b>17:30</b>	<i>Jozef Sumec:</i> <b>Experimental Tests of the Shear Strength of the Cohesive Soils and Their Use in the Geotechnical Calculations</b>
<b>18:00</b>	<b>Večeře / Dinner</b>

**Středa 2. 6. 2010 / Wednesday June 2<sup>nd</sup>, 2010**

*Kavárna – Sekce 1 / Coffee Room – Section 1*      **2. 6. 2010**

**08:30 – 09:50** | **Chairman:** *prof. Ing. František Šimčák, CSc.*

<b>08:30</b>	<i>František Trebuňa:</i> <b>Abilities of new software for PhotoStress® method</b>
<b>08:50</b>	<i>František Trebuňa:</i> <b>Using of Digital Image Correlation Method for Experimental Determination of Modal Parameters</b>
<b>09:10</b>	<i>Róbert Huňady:</i> <b>Influence of Spraying on the Surface of Investigated Object to Precision of Digital Image Correlation</b>
<b>09:30</b>	<i>Ivan Jandejsek:</i> <b>Optimization and Calibration of Digital Image Correlation Method</b>
<b>09:50</b>	<b>Občerstvení / Coffee Break</b>

**10:10 – 11:30**

**Chairman:**

*Dr.h.c. mult. prof. Ing. František Trebuňa, CSc.*

<b>10:10</b>	<i>Jozef Bocko:</i> <b>Application of Lie Groups in the Study of Beam and Plate Vibrations</b>
<b>10:30</b>	<i>Miroslav Pástor:</i> <b>Analysis of Stress States in Critical Parts of Supporting Structure of Steam Boiler and Determination of Its Residual Life Span</b>
<b>10:50</b>	<i>František Šimčák:</i> <b>Experimental and Numerical Analysis of Failure in Press Supporting Structure</b>
<b>11:10</b>	<i>František Trebuňa:</i> <b>Possibilities of Experimental Verification of Containers for Radioactive Materials Transport</b>
<b>11:30</b>	<b>Oběd / Lunch</b>

**Lovecký salonek – Sekce 2 / Hunting Lounge – 2. 6. 2010  
Section 2**

**08:30 – 09:50** | **Chairman:** *doc. Ing. Bohdana Marvalová, CS.*

<b>08:30</b>	<i>Bohdana Marvalová:</i> <b>Pure Shear Experiment for Rubberlike Materials</b>
<b>08:50</b>	<i>Iva Petříková:</i> <b>Modelling of Mechanical Properties of Cord-rubber Composites</b>
<b>09:10</b>	<i>Gunnar Künzel:</i> <b>Measurement and Evaluation of Textile Straining</b>
<b>09:30</b>	<i>Petra Kochová:</i> <b>Comparison between Mechanical Properties of Fresh and Frozen Specimens of Corio-epidermal Junction of Equine Hoof</b>
<b>09:50</b>	<b>Občerstvení / Coffee Break</b>

**10:10 – 11:30** | **Chairman:** *prof. Ing. Svatava Konvičková, CSc.*

<b>10:10</b>	<i>Pavel Polach:</i> <b>Evaluation of the Processes Causing the Constructional Materials Degradation</b>
<b>10:30</b>	<i>Michal Švantner:</i> <b>Influence of Thermoelastic Instabilities on Thermal Stresses in Brake Discs</b>
<b>10:50</b>	<i>Jaromír Král:</i> <b>Monitoring Responses of a Highway Concrete Bridge to the Effects of Thermal Actions and Heavy Traffic</b>
<b>11:10</b>	<i>Milan Růžička:</i> <b>Use of Fibre Bragg Grating Sensors for Structural Health Monitoring of Structures</b>
<b>11:30</b>	<b>Oběd / Lunch</b>

**Odjezd autobusů na exkurzi do přečerpávací vodní elektrárny Dlouhé stráně.**

**!!! 13:00 !!!**

**Bus Departure for the excursion to the Dlouhé stráně pumped storage plant.**

**Čtvrtek 3. 6. 2010 / Thursday June 3<sup>rd</sup>, 2010**

**Kavárna – Sekce 1 / Coffee Room – Section 1 3. 6. 2010**

**08:30 – 10:30** | **Chairman:** *prof. Ing. Vladislav Laš, CSc.*

<b>08:30</b>	<i>Jiří Kuželka:</i> <b>Fatigue Degradation in the Vicinity of Contact Interface under Fretting Conditions</b>
<b>08:50</b>	<i>Jaroslav Valach:</i> <b>Nondestructive Methods for Detection of Hidden Fatigue Crack in the Steel Bridge Element</b>
<b>09:10</b>	<i>Miroslav Kopecký:</i> <b>A New Construction for Tyres, Their Disc Frequencies and Testing Equipments for Fatigue Tests</b>
<b>09:30</b>	<i>Miroslav Novosad:</i> <b>Fatigue Tests of Railway Axles</b>
<b>09:50</b>	<i>Karel Doubrava:</i> <b>Determination of the Fatigue Life of the Shank Disk Harrow</b>
<b>10:10</b>	<i>Petr Měšťánek:</i> <b>Fatigue Testing of the Fir Tree Root of a Turbine Blade</b>
<b>10:30</b>	<b>Občerstvení / Coffee Break</b>

**10:50 – 12:30** | **Chairman:** *prof. Ing. František Plánička, CSc.*

<b>10:50</b>	<i>Vladislav Laš:</i> <b>Degradation of Mechanical Properties of Composite Caused by Cyclic Loading</b>
<b>11:10</b>	<i>Ivo Černý:</i> <b>Experimental Methodology for Evaluation of High Cycle Fatigue Properties of Tubes with Variable Diameter</b>
<b>11:30</b>	<i>Ivo Černý:</i> <b>Experimental Stress Analysis of Critical Locations in Vicinity of Frame Welds of Hospital Sickbeds</b>
<b>11:50</b>	<i>Jiří Jankovec:</i> <b>Analysis of Welded Thin-walled Profiles Under Large Deformations</b>
<b>12:10</b>	<i>Pavel Macura:</i> <b>Stress Analysis of Pipeline Valves</b>

12:30	<i>Peter Bigoš</i> <b>Experimental Determination of Circumferential and Meridian Stresses of the Blast Furnace Shell</b>
12:50	<b>Ukončení konference / Closing Ceremony</b>
13:00	<b>Oběd / Lunch</b>

***Lovecký salonek – Sekce 2 / Hunting Lounge – 3. 6. 2010  
Section 2***

**08:30 – 10:30** | **Chairman:** *doc. Ing. Miroslav Sochor, CSc.*

08:30	<i>Miroslav Sochor:</i> <b>The Influence of Short-Term Simulated Body Fluid Storage on the Mechanical Properties of Composites Based on Polyamide Fibers and PDMS Matrix Modified by CaP nano/micro Particles</b>
08:50	<i>Josef Vacík:</i> <b>Experimental Determination of Damping Characteristics of Hybrid Composite Structure</b>
09:10	<i>Vilém Pompe:</i> <b>Verification of the Strength of the Composite Propeller Blade Retention by means of Strain-gauge Measurement</b>
09:30	<i>Jan Krystek:</i> <b>Identification of Mechanical Properties from Tensile and Compression Tests of Unidirectional Carbon Composite</b>
09:50	<i>Daniel Vavřík:</i> <b>Identification of Material Parameters of an Orthotropic Metal Sheet</b>
10:10	<i>Lenka Melzerová:</i> <b>Variability of Strength for Beams from the Glued Laminated Timber</b>
10:30	<b>Občerstvení / Coffee Break</b>

**10:50 – 12:30** | **Chairman:** *prof. RNDr. Miroslav Hrabovský, DrSc.*

10:50	<i>Ján Ivanka:</i> <b>Utilisation of Light and Laser Security Protection in the Commercial Security Industry</b>
11:10	<i>Hana Chmelíčková:</i> <b>Laser Welding of Stainless Steel Tubes</b>

11:30	<i>Martina Havelková:</i> <b>Numerical Modelling of the Glass Shaping Forms Cooling</b>
11:50	<i>Helena Hiklová:</i> <b>Contact System of Solid State Surface Mapping</b>
12:10	<i>Miroslav Pech:</i> <b>Introduction to Roughness ASR Measurement Method with Mirror Roughness Measurement Example</b>
12:30	<b>Přesun do salonku Kávárna, kde ve 12:50 proběhne Ukončení konference / Go to the Coffee Room where the Closing Ceremony takes place at 12:50</b>