

# **ENGINEERING MECHANICS 2024**

**30<sup>th</sup> INTERNATIONAL CONFERENCE**

**MAY 14 – 16, 2024, MILOVY, CZECH REPUBLIC**



## **PROGRAMME OF THE CONFERENCE**

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**Institute of Solid Mechanics, Mechatronics and Biomechanics,  
Faculty of Mechanical Engineering, Brno University of Technology**

**Institute of Thermomechanics,  
Academy of Sciences of the Czech Republic, v.v.i. – branch Brno**

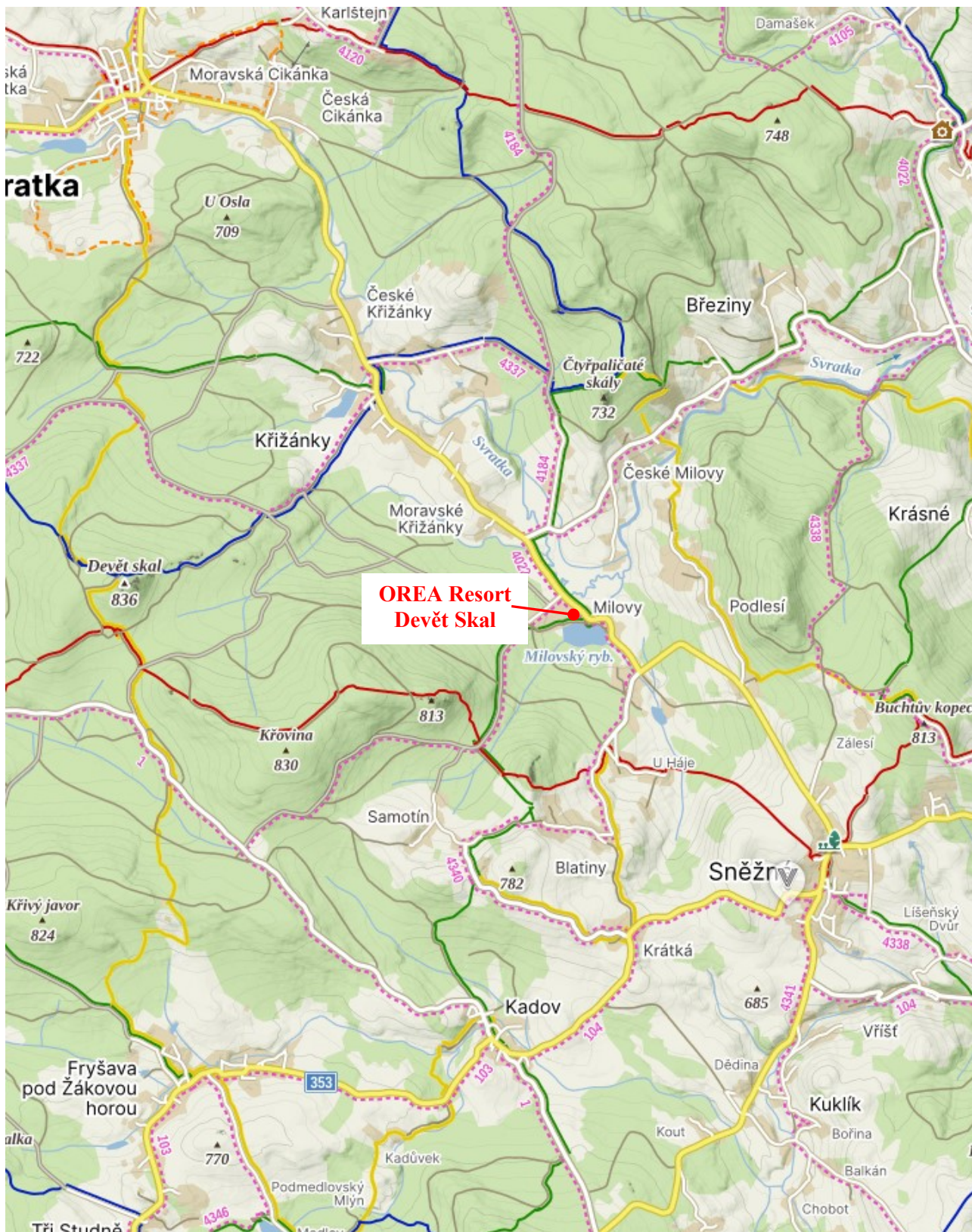
**Institute of Theoretical and Applied Mechanics,  
Academy of Sciences of the Czech Republic, v.v.i.**

**ŽDAS, a. s., Žďár nad Sázavou**

**IFTToMM Member Committee of Czech Republic**

**Czech Society for Mechanics**

## Conference Hotel - OREA Resort Devět Skal Vysočina, Milovy



source: [www.mapy.cz](http://www.mapy.cz)

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## CONTACT ADDRESS OF THE ENGINEERING MECHANICS 2024

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## Conference EM2024 is hosted by the OREA Resort Devět Skal, Milovy

**Address:**  
**OREA Resort Devět Skal**  
**Sněžné - Milovy 11**  
**592 02 Svratka**  
**Czech Republic**

**Hotel reception and Registration Desk:**  
Tel.: +420 566 585 111  
e-mail: [rezervace.9skal@orea.cz](mailto:rezervace.9skal@orea.cz)  
[www.resortdevetskal.cz](http://www.resortdevetskal.cz)

# ***1. GENERAL INFORMATION***

## **ACCOMMODATION**

The accommodation of the participants is reserved in the **OREA Resort Devět Skal** (see map above). Please contact kindly the reception of the hotel immediately after your arrival. For information regarding other **hotel services**, please contact hotel reception (swimming pool, etc.).

## **BADGES**

The participants are kindly requested to **wear their badges during the conference** to be admitted to scientific sessions, meals, transportation and other services.

## **BOARDING**

Boarding is provided for participants in the hotel restaurant, **starting with Tuesday dinner and ending by the breakfast on Thursday**. Breakfasts are served from 7:00, lunches and dinners are scheduled according to the conference programme. The meal costs are included in the conference fee. The visible conference badge is a sign for the staff to serve you.

## **CONFERENCE REGISTRATION**

The **Registration corner of the EM2024 Conference** is located in front of the Conference Hall (on the 2<sup>nd</sup> floor) of the hotel Devět Skal. It is open from 13:00 to 18:30 on Tuesday (14<sup>th</sup> May) and from 8:30 to 16:00 on Wednesday (15<sup>th</sup> May).

## **INSURANCE**

The Conference Committee is not responsible for the health problems of the participants nor for losses. The visitors from abroad are recommended to take out insurance in the country of their origin.

## **INTERNET SERVICES**

**Wi-Fi coverage of the entire hotel** is ensured during the conference.

## **REFRESHMENT**

**Coffee, tea and cookies are available during the Coffee Breaks** for all conference participants. Outside these breaks, snacks can be purchased at the hotel bar (11:00 – 23:00). For other possibilities, please contact the staff of the hotel.

## **TRANSPORTATION**

- **A special bus to Milovy will be leaving Žďár nad Sázavou (bus station in front of the railway station) at 12:45 on Tuesday 14 May, 2024.**
- **A special bus to Žďár nad Sázavou (bus & railway station) will be leaving hotel Devět Skal approximately at 9:30 on Thursday 16 May, 2024.**

## ***2. SCIENTIFIC INFORMATION***

The **30<sup>th</sup> International Conference ENGINEERING MECHANICS 2024** continues in the tradition of the fruitful meetings which have been held in Svratka for many decades.

The Scientific Committee reviewed and chose **75 papers** for the presentation (57 lectures and 18 posters) including **2 invited keynote lectures**, which will be heard on Tuesday and Wednesday. All accepted papers are published in **Conference Proceedings “Engineering Mechanics 2024”**. The proceedings will be also published on-line on [www.engmech.cz](http://www.engmech.cz).

### **OFFICIAL LANGUAGE**

The official languages of the conference are **Czech, Slovak and English**. No simultaneous translation is provided. All presentations/posters must be written in English.

### **LECTURES**

The conference includes the **Keynote lectures** (plenary session) and parallel sessions in the conference facilities located on the 2<sup>nd</sup> floor of the Devět skal hotel. The plenary sessions will take place in the main lecture hall (**Conference Hall**), the **parallel sections** in three smaller lounges (**Lecture Hall I – III**) that are accessible from the Conference Hall.

The presentation of a **keynote lecture lasts 40 minutes** while that one of a **normal lecture 15 minutes** including the discussion. **The Chairmen of scientific sessions are responsible for keeping the timetable**. The presenting authors are kindly asked to **contact their PC Service** at least 10 minutes before starting of the session and **to check functionality of their presentation**.

The data projector with PC is available in all Lecture Halls as a standard. No other facilities will be provided, unless the speaker employs its own device – please contact the PC Service in that Lecture Hall.

### **POSTER SESSION**

The area for the poster session is reserved in the back of the Conference Hall from Tuesday afternoon. For every paper announced for the poster session, a particular panel of ca. 0.9 x 1.2 m (width x height) is assigned and labelled by the number and title of the poster. The fixing material will be available at the place and at the Registration Desk.

The authors of the posters exhibited at the Conference can register at the Registration Desk to the **competition for the Prize of the Managing Director of the ŽĎAS**. The only condition for participation is the personal presence of the author at the Award Ceremony.

The **Special Poster Committee** – under chairmanship of Mr. Radek Vlček, MSc., technical director of the ŽĎAS company – will conclude the assessment of the posters exhibited on **Wednesday (11:15 – 11:45)**. The winners of the competition will be announced and awarded on **Wednesday evening at 19:00** before the Group Photo and Conference Dinner.

The authors are kindly asked to **dismount their posters by Wednesday evening**.

### **VARIATIONS**

The **Scientific Committee is entitled to vary the conference programme** if necessary for scientific or technical reasons. If a speaker is missing in the planned time the next speakers take the order and the break after that particular session will be longer.

## LIST OF SECTIONS

<b>Section</b>	<b>Abbreviation</b>	<b>Lecture Hall</b>
<b>Keynote Lectures</b>	<b><i>KEY I and II</i></b>	
<b>Poster Session</b>	<b><i>POS</i></b>	<b>Conference Hall</b>
<b>Dynamics + Kinematics</b>	<b><i>DYN I and II</i></b>	
<b>Technological Processes</b>	<b><i>TEC</i></b>	<b>Lecture Hall I</b>
<b>Mechatronics</b>	<b><i>MCT</i></b>	
<b>Mechanics of Solids</b>	<b><i>SOL</i></b>	
<b>Thermomechanics</b>	<b><i>TER</i></b>	<b>Lecture Hall II</b>
<b>Fluid Mechanics</b>	<b><i>FLU I and II</i></b>	
<b>Biomechanics</b>	<b><i>BIO</i></b>	
<b>Reliability of Structures</b>	<b><i>REL</i></b>	<b>Lecture Hall III</b>

### 3. CONFERENCE TIMETABLE

<i>Tuesday – 14<sup>th</sup> May 2024</i>				
13:00 – 18:30	Registration – in front of the Conference Hall			
	Conference Hall			
15:15 – 15:30	Opening Ceremony			
15:30 – 16:10	<i>KEY I</i> – Keynote lectures			
16:10 – 16:30	Coffee Break			
	Conference Hall	Lecture Hall I	Lecture Hall II	Lecture Hall III
16:30 – 18:45		<i>DYN I</i>	<i>SOL TER</i>	<i>BIO</i>
18:45 – 20:00	Dinner – Restaurant			

<i>Wednesday – 15<sup>th</sup> May 2024</i>				
8:30 – 16:00	Registration – in front of the Conference Hall			
	Conference Hall	Lecture Hall I	Lecture Hall II	Lecture Hall III
9:00 – 9:40	<i>KEY II</i>			
9:45 – 11:15		<i>DYN II</i>	<i>FLU I</i>	<i>REL</i>
11:15 – 11:45	Coffee Break & Poster Session (see below)			
	Conference Hall	Lecture Hall I	Lecture Hall II	Lecture Hall III
11:15 – 11:45	<i>POS</i>			
12:00 – 14:00	Lunch – Restaurant			
	Conference Hall	Lecture Hall I	Lecture Hall II	Lecture Hall III
14:00 – 15:15		<i>TEC MCT</i>	<i>FLU II</i>	
15:15 – 15:45	Coffee Break			
15:45 – 19:00	Free time			
	Conference Hall			
19:00 – 19:15	Award of the Prize of the Technical Director of ŽŤDAS			
19:15 – 19:20	Group photo in front of the OREA Hotel Devět Skal			
19:20 – 24:00	Conference Dinner – Restaurant			

## 4. DETAILED PROGRAMME

### 4.1. Conference Hall

#### Tuesday – 14<sup>th</sup> May 2024 – Conference Hall

15:15 – 15:30	<b>Opening Ceremony – Plenary session</b>	
	<b>Keynote lectures – Plenary session</b> (KEY I) Chairman: J. Petruška	
15:30 – 16:10	Sant Z.: <i>QUO VADO BIOMECHANICS</i>	24
16:10 – 16:30	<b>Coffee Break</b>	

#### Wednesday – 15<sup>th</sup> May 2024 – Conference Hall

	<b>Keynote lectures – Plenary session</b> (KEY II) Chairman: J. Petruška	
9:00 – 9:40	Hajžman M., Bulín R., Byrtus M., Dyk Š., Polach P., Rendl J., Smolík L.: <i>DYNAMICS OF ROTATING SYSTEMS FOCUSED ON INDUSTRIAL APPLICATIONS</i>	18

#### 4.1.1. Poster session (POS)

#### Wednesday – 15<sup>th</sup> May 2024 – Conference Hall

11:15 – 11:45	<b>Note:</b> All of the entered posters exhibited at the Conference will be accepted into the competition for the <b>Prize of the Managing Director of the ŽDAS Company</b> . The special committee – under chairmanship of <b>Ing. Radek Vlček</b> , technical director of the ŽDAS company.	
BIO	Gzik-Zroska B., Jozsko K., Stradomski G., Piątek A., Wolański W., Kawlewska E.: <i>ASSESSMENT OF MECHANICAL PROPERTIES OF TITANIUM SAMPLES, MANUFACTURED WITH THE USE OF ADDITIVE TECHNOLOGIES</i>	102
BIO	Thomková B., Hrubanová A., Košková O., Richtrová M., Skácel P., Štourač P., Marcián P.: <i>EXPERIMENTAL ASSESMENT OF THE MECHANICAL BEHAVIOR OF IMPRESSION MATERIAL FOR ANAESTHESIOLOGY USE: A PRELIMINARY STUDY</i>	298



<b>BIO</b>	<b>Thomková B., Borák L., Podešva P., Podešva M., Joukal M., Marcián P.:</b> <i>INFLUENCE OF DENTAL IMPLANT INSERTION DEPTH ON STRAIN IN PERIIMPLANT BONE TISSUE</i>	<b>302</b>
<b>DYN</b>	<b>Čečrdle J., Vích O., Stárek J., Vlach J., Kolář M., Šmíd M.:</b> <i>NEW DESIGN AND UPGRADE OF WHIRL FLUTTER AEROELASTIC DEMONSTRATOR</i>	<b>66</b>
<b>DYN</b>	<b>Pavlenko M. V.:</b> <i>DEGREE OF SUSCEPTIBILITY OF THE GAS-BEARING COAL MASSIF TO CHANGES UNDER VIBRATION AND TECHNICAL SOLUTIONS FOR INCREASING METHANE EXTRACTION FROM THE RESERVOIR</i>	<b>234</b>
<b>FLU</b>	<b>Balážová R., Ferrari S., Hlinka J., Santus A.:</b> <i>TURBULENCE ESTIMATION BY EDDY DISSIPATION RATE AT LOW-ALTITUDES USING UAV IN-SITU DATA</i>	<b>42</b>
<b>FLU</b>	<b>Pařez J., Vampola T.:</b> <i>PREDICTION OF NON-STATIONARY DEFORMATION OF GAS TURBINE USING MACHINE LEARNING APPROACH COUPLING BETWEEN CFD AND FEM MODEL</i>	<b>226</b>
<b>KIN</b>	<b>Hroncová D., Delyová I., Sivák P., Prada E.:</b> <i>MANIPULATOR TRAJECTORY AND WORKSPACE IN THE MATLAB AND MSC ADAMS ENVIRONMENTS</i>	<b>130</b>
<b>MCT</b>	<b>Miková L., Šarga P., Vagaš M., Prada E., Brada L.:</b> <i>MODELING OF A QUARTER-CAR MODEL PASSING AN OBSTACLE USING LAPLACE TRANSFORMS, MATLAB/SIMULINK AND SIMSCAPE</i>	<b>202</b>
<b>MCT</b>	<b>Vechet S., Krejsa J., Chen K. S.:</b> <i>AI BASED ASSISTIVE MAINTENANCE OF MACHINES VIA QUERIX EXPERT-SYSTEM</i>	<b>310</b>
<b>SOL</b>	<b>Jančář R., Dluhoš J., Fridrichová K.:</b> <i>INFLUENCE OF SIMPLIFYING THE GEOMETRY OF THE FE MODEL OF THE VEHICLE FRONTAL FULL BARRIER CRASH TEST</i>	<b>146</b>
<b>SOL</b>	<b>Kovář J., Fuis V.:</b> <i>INFLUENCE OF BERKOVICH INDENTER TILT ON THE PROJECTED CONTACT AREA AT NANOINDENTATION TEST</i>	<b>166</b>
<b>SOL</b>	<b>Ondrášek J.:</b> <i>DESIGN OF AN INDEXING GEARBOX WITH RADIAL CAMS</i>	<b>218</b>
<b>SOL</b>	<b>Rackovský D. M., Czako A.:</b> <i>INFLUENCE OF SINE-SHAPED PROFILE DEVIATIONS ON STATIC TRANSMISSION ERROR</i>	<b>246</b>
<b>SOL</b>	<b>Wdowiak-Postulak A., Świt G., Krampikowska A.:</b> <i>PREFABRICATED SYSTEM FOR STRENGTHENING FULL-SIZE WOODEN GIRDERS USING PRE-STRESSED FIBER-REINFORCED POLYMERS AND STEEL – BENDING SHEAR TESTS</i>	<b>318</b>
<b>TEC</b>	<b>Mrkos J., Horký P., Formánek M.:</b> <i>RECONSTRUCTION OF DUO ROLLING MILL</i>	<b>206</b>
<b>TER</b>	<b>Chudý D., Jegla Z.:</b> <i>PERSPECTIVE WAYS OF HEAT TRANSFER ENHANCEMENT FOR HEAT EXCHANGERS IN FOULING CONDITIONS</i>	<b>74</b>
<b>TER</b>	<b>Zabloudil J., Jegla Z., Daxner J., Babička Fialová D., Freisleben V., Reppich M.:</b> <i>CONSTRUCTION OF A MODULAR DEVICE FOR TESTING HIGHTEMPERATURE FLUE-GAS FOULING IN WASTE-HEAT SOURCES</i>	<b>322</b>

## 4.2. Lecture Hall I

**Tuesday – 14<sup>th</sup> May 2024 – Lecture Hall I**

<b>16:30 – 18:45</b>	<b><i>Dynamics and Kinematics</i></b> <b>Chairmen: M. Hajžman, P. Polach</b>	<b>(DYN I)</b>
<b>16:30</b>	<b>Hračov S., Macháček M.:</b> <i>GALLOPING OF INSULATED BUNDLED OVERHEAD LINE SIMPLIFIED ANALYSIS</i>	<b>126</b>
<b>16:45</b>	<b>Macháček M., Hračov S.:</b> <i>GALLOPING OF INSULATED BUNDLED OVERHEAD LINE - NONLINEAR NUMERICAL ANALYSIS IN TIME DOMAIN</i>	<b>190</b>
<b>17:00</b>	<b>Isoz M., Gruber P., Ježek O., Kubičková L., Gabriel D., Kaufman J., Brajer J.:</b> <i>USING FINITE VOLUME METHOD TO SIMULATE LASER SHOCK PEENING OF 7050 AL ALLOY</i>	<b>142</b>
<b>17:15</b>	<b>Dohnal J., Šebík M.:</b> <i>BATTERY CRASH SIMULATION IN ANSYS LS-DYNA</i>	<b>86</b>
<b>17:30</b>	<b>Polach P., Smolík L., Byrtus M., Hajžman M.:</b> <i>INVESTIGATION OF THE EFFECT OF SURFACE TEXTURING IN HYDRODYNAMIC SLIDING CONTACTS</i>	<b>242</b>
<b>17:45</b>	<b>Fischer C., Náprstek J.:</b> <i>SOLUTION METHODS FOR AN AEROELASTIC PROBLEM WITH COMBINED HARMONIC AND STOCHASTIC EXCITATION</i>	<b>98</b>
<b>18:00</b>	<b>Bayer J.:</b> <i>APPLYING A TWO DEGREE OF FREEDOM MODEL FOR DRIVE-BY IDENTIFICATION</i>	<b>46</b>
<b>18:15</b>	<b>Byrtus R.:</b> <i>CGA-BASED SNAKE ROBOT CONTROL MODEL</i>	<b>54</b>
<b>18:30</b>	<b>Kumar Y.:</b> <i>FREE AXISYMMETRIC VIBRATION OF ELASTICALLY RESTRAINED POROUS ANNULAR PLATE USING HAAR WAVELETS</i>	<b>178</b>
<b>18:45 – 20:00</b>	<b><i>D i n n e r – Restaurant</i></b>	

## Wednesday – 15<sup>th</sup> May 2024 – Lecture Hall I

9:45 – 11:15	<b><i>Dynamics</i></b> Chairmen: M. Sokol, J. Dupal	<b>(DYN II)</b>
9:45	Marton M., Sokol M., Lamperová K.: <i>STRUCTURAL DAMAGE DETECTION BY PSO METHOD</i>	194
10:00	Kalaczyński T., Łukasiewicz M., Liss M., Mazurkiewicz A.: <i>VIBRATION DIAGNOSTICS IN THE ASSESSMENT OF THE VEHICLES BODYWORK TECHNICAL STATE PROCEDURE</i>	150
10:15	Sokol M., Crespo-Sanchez S., Rodríguez-Paz M., Mazáčková K., Gogová Z.: <i>DAMAGE IDENTIFICATION OF SMALL HOUSES IN DIFFERENT SEISMIC REGIONS</i>	278
10:30	Dupal J.: <i>PROBABILITY LIMITS OF THE CRITICAL ROTOR SPEEDS</i>	94
10:45	Sosna P., Hadaš Z.: <i>DEVELOPMENT AND VERIFICATION OF NOVEL DUAL PLUNGER HYBRID KINETIC ENERGY HARVESTER</i>	286
11:00	Rohan E., Naili S.: <i>ELASTODYNAMICS IN PERIODIC MEDIA – APPROXIMATION BY HIGHER ORDER HOMOGENIZATION AND METAMATERIALS WITH RESONATORS</i>	258
11:15 – 11:45	<b><i>Coffee Break &amp; Poster Session</i></b>	
12:00 – 14:00	<b><i>Lunch – Restaurant</i></b>	
14:00 – 15:15	<b><i>Technological Processes</i></b> <b><i>Mechatronics</i></b> Chairmen: S. Věchet, Z. Hadaš	<b>(TEC)</b> <b>(MCT)</b>
14:00	Houfek M., Šimáček F.: <i>STRESS-STRAIN ANALYSIS OF THE EFZ-22 SAND FILTER PRESSURE VESSEL</i>	122
14:15	Holesovský F., Hejna M.: <i>TEMPERATURE FIELD EVALUATION USING INJECTION MOLD THERMAL INSERTS</i>	118
14:30	Červenka M., Košťál R.: <i>THERMAL MANAGEMENT FOR MISSION CRITICAL AIRCRAFT EQUIPMENT</i>	70
14:45	Krejša J., Věchet S., Šnajder J.: <i>MOTION ANALYSIS OF CZECH SIGN LANGUAGE ALPHABET CNN BASED CLASSIFIER VIA OPTICAL FLOW</i>	170
15:00	Slabý V., Bajer J., Hadaš Z.: <i>QCONCEPT OF SMART CYMBAL STRUCTURE FOR STRUCTURAL HEALTH MONITORING APPLICATIONS</i>	262
15:15 – 16:15	<b><i>Coffee Break</i></b>	

### 4.3. Lecture Hall II

**Tuesday – 14<sup>th</sup> May 2024 – Lecture Hall II**

16:30 – 18:30	<b><i>Mechanics of Solids</i></b> <b><i>Thermomechanics</i></b> <b>Chairmen: V. Vacek, J. Němeček</b>	<b>(SOL)</b> <b>(TER)</b>
16:30	<b>Cimrman R.:</b> <i>WEAK IMPOSITION OF POTENTIAL DIRICHLET BOUNDARY CONDITIONS IN PIEZOELASTICITY: NUMERICAL STUDY</i>	78
16:45	<b>Němeček J., Němečková J., Němeček J.:</b> <i>MICRO-SCALE CREEP OF CEMENTITIOUS MATERIALS</i>	214
17:00	<b>Hrstka M., Bajer J., Hadaš Z., Sharif Khodaei Z., Aliabadi F., Kotoul M.:</b> <i>MODELLING OF LEADING EDGE MORPHING BY USING GEOMETRICALLY EXACT BEAM THEORY</i>	134
17:15	<b>Lukeš V., Rohan E.:</b> <i>EFFICIENT COMPUTATIONAL ALGORITHM FOR SOLVING TWO-SCALE PROBLEMS OF LARGE DEFORMING HETEROGENEOUS PERIODIC STRUCTURES</i>	186
17:30	<b>Komlev V., Machacek J.:</b> <i>DESIGN OF CABLE-NETS FOR GLASS FAÇADES</i>	162
17:45	<b>Blacha Ľ.:</b> <i>B-SPLINE BASED DENSITY ESTIMATION OF FATIGUE FAILURES IN SLM 18NI300 STEEL</i>	50
18:00	<b>Čada Z., Černák M.:</b> <i>STRUCTURAL OPTIMIZATION USING BIOLOGICAL GROWTH METHOD IN ANSYS MECHANICAL, PART I and II</i>	58
18:15	<b>Daxner J., Jegla Z., Zabloudil J., Babička Fialová D., Reppich M.:</b> <i>DESIGN OF A DEVICE FOR MEASURING THE RATE OF PARTICULATE FOULING OF HEAT TRANSFER SURFACES</i>	82
18:30	<b>Panfilov I. A., Aizikovich S. M., Vasiliev A. S.:</b> <i>ELASTOPLASTIC MODELS FOR INTERPRETING INDENTATION RESULTS</i>	222
18:45 – 20:00	<b><i>D i n n e r – R e s t a u r a n t</i></b>	

## Wednesday – 15<sup>th</sup> May 2024 – Lecture Hall II

9:45 – 11:15	<b><i>Fluid Mechanics</i></b> Chairmen: D. Duda, M. Isoz	<b>(FLU I)</b>
9:45	Šnábl P., Procházka P., Uruba V., Pešek L.: <i>INVESTIGATION OF 3D FLOW STRUCTURES IN A LINEAR BLADE CASCADE WITH STEREO PARTICLE IMAGE VELOCIMETRY</i>	270
10:00	Duda D., Uruba V., Yanovych V., Klimko M., Tomášková T., Jeřábek M., Žitek P., Milčák P.: <i>PIV MEASUREMENT OF WAKES PAST STATOR WHEEL INSIDE AIR TEST TURBINE VT-400 IN TWO AXIAL×TANGENTIAL PLANES</i>	90
10:15	Khýr M., Plachá M., Hlavatý T., Isoz M.: <i>DATA-DRIVEN APPROACH TO ESTIMATING SOOT DISTRIBUTION INSIDE CATALYTIC FILTERS IN AUTOMOTIVE EXHAUST GAS AFTERTREATMENT</i>	154
10:30	Hlavatý T., Isoz M.: <i>ON DIFFUSION, REACTION, AND FLOW OF HIGHCONCENTRATION MULTICOMPONENT GAS MIXTURES</i>	114
10:45	Ledvinková B., Hračov S., Macháček M.: <i>LES SIMULATIONS OF AIRFLOW AROUND RECTANGLE WITH SIDE RATIO 2:1 AND THEIR COMPARISON WITH EXPERIMENTS</i>	182
11:00	Havran E.: <i>ANALYTICAL INVESTIGATION OF MARS DRONE CONCEPTUAL DESIGN</i>	110
11:15 – 11:45	<b><i>Coffee Break &amp; Poster Session</i></b>	
12:00 – 14:00	<b><i>Lunch – Restaurant</i></b>	
14:00 – 15:15	<b><i>Fluid Mechanics</i></b> Chairmen: M. Isoz, D. Duda	<b>(FLU II)</b>
14:00	Ples M., Wolański W., Sobkowiak M.: <i>ENHANCING MEDICAL INSIGHTS THROUGH COMPUTATIONAL FLUID DYNAMICS: VALIDATING SIMULATION MODEL FOR BLOOD FLOW IN VASCULAR SYSTEM</i>	238
14:15	Kubičková L., Isoz M.: <i>REYNOLDS-AVERAGED SIMULATION OF TURBULENT FLOWS WITH IMMERSSED BOUNDARIES</i>	174
14:30	Studeník O., Kotouč Šourek M., Isoz M., Kočí P.: <i>PARALLELIZATION OF DEM SOLVER FOR NON-SPHERICAL SOLIDS: A PATHWAY TO SCALABLE CFD-DEM SIMULATIONS</i>	290
14:45	Zeman R., Rudolf P.: <i>OPTIMIZING VENTURI NOZZLE DESIGN FOR ENHANCED CAVITATION AND PRESSURE DYNAMICS: A COMPARATIVE ANALYSIS OF TURBULENCE MODELS FOR CAVITATING FLOW CHARACTERIZATION</i>	326
15:00	Kolář D.: <i>DYNAMIC PROPERTIES OF PRESSURE COMPENSATED PUMP</i>	158
15:15 – 15:45	<b><i>Coffee Break</i></b>	

## 4.4. Lecture Hall III

**Tuesday – 14<sup>th</sup> May 2024 – Lecture Hall III**

16:30 – 18:30	<b>Biomechanics</b> Chairmen: Z. Sant, M. Pásek	<b>(BIO)</b>
16:30	<b>Abramczyk I., Ligaj B.:</b> <i>INFLUENCE OF THE ETCHING TIME OF Ti6Al4V TITANIUM ALLOY WITH SELECTED ACID SOLUTIONS ON CHANGES IN PHYSICAL PARAMETERS OF THE ELEMENT</i>	38
16:45	<b>Pásek M., Bébarová M., Christé G.:</b> <i>ROLE OF SUBMEMBRANE SPACES IN THE CONTROL OF TRANSMEMBRANE ION FLUX AND CELLULAR INOTROPIC STATE IN A MODEL OF HUMAN VENTRICULAR CARDIOMYOCYTE</i>	230
17:00	<b>Radolf V., Horáček J., Košina J.:</b> <i>EXPERIMENTAL INVESTIGATION OF FLUID-STRUCTURE-ACOUSTIC COUPLINGS BY STUDYING THE RESONANCE PROPERTIES OF VOCAL TRACT MODELS WITH YIELDING WALLS</i>	250
17:15	<b>Hájek P., Horáček J., Švec J. G.:</b> <i>AUGMENTED M5 GEOMETRY OF HUMAN VOCAL FOLD IN PHONATORY POSITION – PILOT RESULTS</i>	106
17:30	<b>Hrubanová A., Thomková B., Košková O., Richtrová M., Borák L., Štourač P., Marcián P.:</b> <i>IMPACT OF DIFFERENT DISINFECTION SOLUTIONS ON MECHANICAL PROPERTIES OF ORTHODONTIC IMPRESS SILICONE MATERIAL</i>	138
17:45	<b>Sochor O., Hrubanová A., Joukal M., Burša J.:</b> <i>INFLUENCE OF ARTERY UNFOLDMENT ON ITS MECHANICAL RESPONSE</i>	274
18:00	<b>Votava T., Marcián P., Borák L., Fuis V., Zikmund T., Kaiser J., Wolff J.:</b> <i>APPARENT YOUNG'S MODULUS OF HUMAN CRANIAL CANCELLOUS BONE</i>	314
18:15	<b>Raziyan M. S., Janusas G.:</b> <i>ENHANCING SENSITIVITY IN PIEZOELECTRIC MICRO CANTILEVER DESIGNS USING STRESS CONCENTRATION REGIONS FOR LABEL FREE DETECTION</i>	254
18:45 – 20:00	<b>D i n n e r – Restaurant</b>	

***Wednesday – 15<sup>th</sup> May 2024 – Lecture Hall III***

<b>9:45 – 11:15</b>	<b><i>Reliability of Structures</i></b> <span style="float: right;"><b>(REL)</b></span> <b>Chairmen: D. Novák, J. Petruška</b>
<b>9:45</b>	<b>Michálková A., Jegla Z., Krišpín J., Gross A., Reppich M.: ASPECTS OF ADAPTATION OF FLANGE JOINTS FOR MODERN LOW-CARBON ENERGETICS</b> <span style="float: right;"><b>198</b></span>
<b>10:00</b>	<b>Slowik O., Šomodíková M., Novák D.: NON-LINEAR PROBABILISTIC ASSESSMENT OF EXISTING BRIDGE CONSIDERING DETERIORATION</b> <span style="float: right;"><b>266</b></span>
<b>10:15</b>	<b>Šorm F.: ACOUSTIC EMISSION METHODS IN STEEL BRIDGE DEGRADATION IDENTIFICATION AND MONITORING</b> <span style="float: right;"><b>282</b></span>
<b>11:15 – 11:45</b>	<b><i>Coffee Break &amp; Poster Session</i></b>