

# ENGINEERING MECHANICS 2003

NATIONAL CONFERENCE WITH INTERNATIONAL PARTICIPATION

MAY 12-15, 2003, SVRATKA, CZECH REPUBLIC



Institute of Solid Mechanics, Faculty of Mechanical Engineering,  
Brno Technical University

Institute of Theoretical and Applied Mechanics,  
Academy of Sciences of the Czech Republic

Institute of Thermomechanics,  
Academy of Sciences of the Czech Republic

ŽDAS, a.s., Žďár nad Sázavou

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Radoslav Kinský, RNDr  
František Peňáz

Managing Director of the ŽDAS, a.s.  
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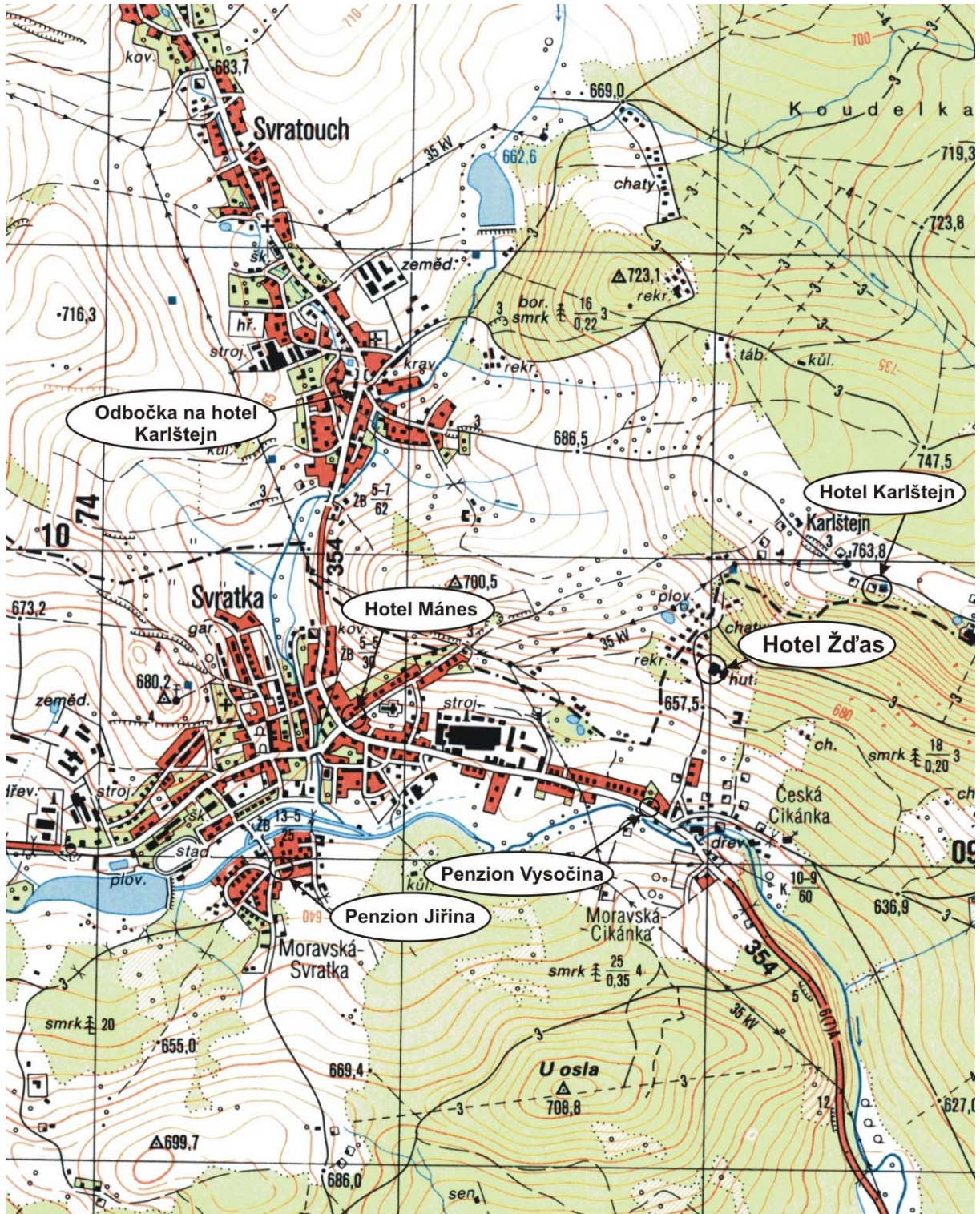
MAY 12-15, 2003, SVRATKA, CZECH REPUBLIC

**Ladies and gentlemen, distinguished colleagues,**

We have again met, after one year, with the view to evaluate the current standard of Mechanics as a scientific discipline in the Czech Republic. I am sure that, in so doing, all of us will have a pleasant and exciting time. In deliberating about the highest tops of the current state of Science, in that murderous tempo with which we strive to catch the world standard (for the well-known reasons not being able to overtake it), do not let us forget the famous traditions of the Czech School of Theoretical, Applied and Experimental Mechanics. They reach back many hundreds of years into the past. As early as the middle of the 16<sup>th</sup> century, Rabbi Loev created the Golem, the first robot; thereby bringing to existence an astonishing collection of works from the domain of Dynamics and Mechatronics. Some time later, Mr. Matěj Brouček, exhausted by his heroic performance in lifting glasses at the Restaurant Vikárka, went astray and spent a night in an empty barrel. From this first European cosmic aerodrome, he then traveled to the Moon. I am sure that you will admit that his merits concerning headway in Cosmic Dynamics cannot be overlooked. Let us also recall those famous artillery Baron Prášil's experiments with the oldest ballistic flights of manned objects. This enumeration of such incontestable proofs of the leading role of Czech Mechanics could be continued for a long time. The task of every cultured man, however, is to honor all traditions, to extend them and, most importantly, in doing this, not to make so serious a face. Perhaps this is also a reason for our traditional conference being held in the spring time and in the milieu of beautiful Žďárské Vrchy, this enabling us to appreciate the beauty around us, which beneficially affects the human soul and generates inspiration in it.

**Vážené kolegyně, vážení kolegové,**

sešli jsme se opět po roce, abychom zhodnotili současnou úroveň mechaniky jakožto vědní disciplíny v České republice. Jistě při tom všichni prožijeme krásné a vzrušující chvíle. Při rozjímání nad nejvyššími vrcholy současné vědy a ve vražedném tempu, kterým již doháníme (ze známých důvodů ovšem nepřeháníme) světovou úroveň, však nikdy nezapomínejme na slavné tradice české školy teoretické, aplikované i experimentální mechaniky. Sahají mnoho set let do minulosti. Již v polovině 16. století stvořil, rabí Loev Golema, prvního robota. Vytvořil tak úžasný soubor prací z dynamiky a mechatroniky. O něco později pan Matěj Brouček zmožen hrdinským výkonem při zvedání sklenic na Vikárce si spletl cestu a strávil noc v prázdném sudu. Z tohoto prvního evropského kosmického letiště potom putoval na Měsíc. Jistě uznáte, že jeho zásluhy o rozvoj kosmické dynamiky jsou nepřehlédnutelné. Vzpomeňme rovněž slavných dělostřeleckých experimentů barona Prášila s nejstaršími balistickými lety těles s lidskou posádkou. Ve výčtu nepopíratelných důkazů vůdčí úlohy české mechaniky by se dalo dlouho pokračovat. Úkolem každého kulturního člověka je ctít staré tradice, navazovat na ně a hlavně netvářit se při tom pořád tak smrtelně vážně. Snad proto se naše tradiční konference koná právě na jaře v prostředí Žďárských Vrchů, abychom mimo své laboratoře lépe vnímali okolní krásu, která působí blahodárně na lidskou duši a probouzí v ní inspiraci.



# 1. GENERAL INFORMATION

## VENUE

The EM2003 Conference is held in the hotel ŽĎAS. **Address :**

**Hotel ŽĎAS**  
**592 02 Svratka**  
**Czech Republic**  
[www.oxygen.cz/svratka](http://www.oxygen.cz/svratka)

**hotel reception and registration desk:**  
Tel. : + 420.566 662 611  
Fax : +420.566 662 418  
e-mail: [hotel.svratka@iol.cz](mailto:hotel.svratka@iol.cz)

## ACCOMMODATION

Accommodation has been reserved in the hotel ŽĎAS. As the number of participants is very high this year, places in other near hotels have also been reserved, see the map. **For information regarding your individual reservation, please contact kindly the reception of the hotel ŽĎAS immediately after your arrival at Svratka. Breakfast is served for all participants (wherever accommodated) in the hotel ŽĎAS only (6,45-8,00 a.m.)**

• <b>hotel ŽĎAS</b>	see above	manager: Mr. Jiří Klouda mobil: +420.602 717 120
• <b>hotel Karlštejn</b>	539 49 Svratouch tel., fax. : +420.566.662 607	manager: Mr. Vambera mobil: +420.602 529 361
• <b>hotel Mánes</b>	Čs. armády 303 592 02 Svratka tel. : +420.566 662 483	manager: Mr. Sálus mobil: +420.721 630 934
• <b>Penzion „Jiřina“</b>	592 02 Mor. Svratka 88 tel. : +420.566 662 465	manager: Mrs. Jiřina Zítková
• <b>Penzion „Vysočina“</b>	Plaňava 182 592 02 Svratka tel. : +420.566 662 354	manager: Mrs. Vlasta Peňázová mobil: +420.605 826 563

## E-MAIL SERVICES

During the whole Conference E-Mail services will be available for sending of short messages. Four PCs will be at disposal to the participants in the hotel lobby. The address:

**IM2003@zdas.cz**

Sending E-mail message to the above address, do not forget to indicate the name of a recipient in SUBJECT. Messages will be fixed in a printed form at the poster **MESSAGES** in the hotel lobby.

In the same time, the PCs above will be able to browse among the EM2003 CD ROM and to read the full text version of papers.

## TRANSPORTATION

### Transportation from Žďár nad Sázavou to Svatka and back (travel time 30 min.):

- A special coach to Svatka (hotel ŽĎAS - Conference venue) will be leaving Žďár nad Sázavou (bus station in front of the railway station) at 14.50 on 12 May (Monday) 2003.
- A special coach to Žďár nad Sázavou (bus & railway station) will be leaving Svatka (hotel ŽĎAS) at 13.45 on 15 May (Thursday) 2003.

**A special van with label of the conference will be operating between the hotel ŽĎAS and other hotels (see above) where participants are accommodated during the whole EM2003 Conference.**

A public bus is operating between Žďár nad Sázavou (bus & railway station) and Svatka (main bus stop at Svatka), fare CZK 24,-. Weekdays:

Žďár nad Sázavou:	↓	8,00	10,05	11,15	13,00	14,45	16,10	18,15
Svatka:	↓	8,45	10,50	12,00	13,45	15,30	16,55	19,00
Svatka:	↓	6,30	7,10	9,15	12,40	13,55	15,50	17,15
Žďár nad Sázavou:	↓	7,15	7,55	10,00	13,25	14,40	16,35	18,00

## OFFICIAL LANGUAGE

The official languages of the conference are Czech, Slovak and English. No simultaneous translation is provided.

## CONFERENCE REGISTRATION

The Registration Desk of the EM2003 Conference is located in the lobby of the hotel ŽĎAS. It is open from 12.00 to 19.00 on Monday 12 May 2003, from 7.30 to 18.00 on Tuesday and from 7.30 to 12.00 on Wednesday and Thursday. Accommodation is provided by the hotel ŽĎAS reception. For information regarding other hotel ŽĎAS services, please contact hotel reception (swimming pool, golf concourse, etc.).

## BOARDING

Lunches and Dinners are served in the Restaurant of the hotel ŽĎAS (Breakfast 6.45-8.00; Lunches 12.00- 14.00; Dinners 19.00-20.30). As the capacity of the restaurant is limited it is recommended to eat in two groups. The visible conference badge is a sign for the staff to serve you.

## REFRESHMENT

Coffee, mineral water and other refreshment are available in the bar of the hotel ŽĎAS (9.40 – 24.00) and in Wine Cellar (20.00 – 24.00).

## BADGES

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

## INSURANCE

The Programme 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.

## 2. SCIENTIFIC INFORMATION

The **ENGINEERING MECHANICS 2003** - National Conference with International Participation continues in the tradition of the fruitful meetings which have been held in Svatka for many years.

The Programme Committee chose 204 papers for the presentation (186 lectures and 18 posters) at the conference while the keynote speakers were invited to cover the particular subjects of the engineering mechanics. All accepted papers are published in Conference Proceedings consisting of two parts:

- The Book of Extended Abstracts, printed by CERM – Akademické nakladatelství s.r.o. Brno, including 448 pgs.
- CD ROM containing Full Text version as well as Extended Abstracts of papers. CD ROM has been made by EXIMPO a.s.

For every corresponding author 10 off-prints of his paper full text are available at the Registration Desk. Feel free to make any arbitrary number of additional copies.

### LECTURES

The conference includes the keynote lectures (plenary session) and parallel sessions in the **Lecture Halls I, II, III, IV, V** located in the area of the hotel ŽĎAS. The popular names of these halls, used in the past, are: **Conference Room (next-door the Restaurant) - L.H. I, Fishmonger's -L.H. II, Wine Cellar – L.H. III** and introduced this year are **Fitness Centrum (next door the Wine Cellar) – L.H. IV, Bowling Alley (next pavilion to the Fishmonger's) – L.H. V**, see LIST OF SECTIONS. TV Club will not be used.

The presentation of a keynote lecture lasts 40 minutes while that one of a normal lecture 20 minutes including the discussion. The Chairmen of scientific sessions are responsible for keeping the timetable. The presenting authors are kindly asked to contact their Section Chairman 10 minutes before starting of the session and to check functionality of their presentation when using a beamer.

The overhead projector and beamer (1024\*768) with PC are available in all lecture halls as a standard. Videorecorder and slide projector (50 x 50 mm) are at disposal at request with preference of those who claimed these devices in the Registration Form. A technician will assist in each of the lecture halls.

### POSTER SESSION

For the poster session the **Green House** (behind the restaurant) is reserved. For every paper announced for the poster session the panel of 1m\*1m is reserved. Presenting authors are entitled to mount their posters since Tuesday 8.00. Some fixing material will be available at the registration desk.

All of the posters exhibited at the Conference will be accepted into the competition for the **Prize of the Managing Director of the ŽĎAS Company**.

The special committee – under chairmanship of Mr. Ivan Trajtel', MSc., technical director of the ŽĎAS company – will conclude the assessment of the posters exhibited on Wednesday at 13.30. The winners of the competition will be announced and awarded on Wednesday evening at 20.00 during the Conference Dinner. The authors are asked to kindly dismount their posters during Thursday morning at the latest.

### VARIATIONS

The Scientific Committee is entitled to vary the 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.

## TECHNICAL EXHIBITIONS

The experimental equipments, instruments, hardware and software relating to engineering mechanics are exposed in the lobby of the hotel ŽĎAS. The following expositions are expected :

- ASATTE – ABAQUS, Prague
- Brüel & Kjaer, Prague
- Hottinger Baldwin Messtechnik, Prague
- SVS FEM, Brno
- Techsoft s.r.o., Prague

## MEETING OF THE SCIENTIFIC COMMITTEE

The members of the Scientific Committee are invited to a working meeting (Wednesday 14 May, 16.00 - 17.00, Meeting room). The results of the meeting will be announced at the plenary session during the Closing Ceremony, on Thursday 15 May 2003 at 12.00 - 12.15.

## CONTACT ADDRESS OF THE ENGINEERING MECHANICS 2003 (not during the conference)

Jiří Náprstek , D.Sc.  
Institute of Theoretical and Applied Mechanics  
Prosecká 76,  
190 00 Praha 9  
Czech Republic

E-mail: [IM2003 @ itam.cas.cz](mailto:IM2003@itam.cas.cz)  
Tel.: +420.286 892 515  
Fax: +420.286 884 634  
<http://www.itam.cas.cz/IM2003>

## LIST OF SECTIONS

Section	Abbreviation	Lecture Hall
Keynote Lectures	<i>KEY</i>	Restaurant
Dynamics	<i>DYN</i>	Lecture Hall I - Conference Room
Mechanics of Solids	<i>SOL</i>	Lecture Hall II - Fishmonger's
Fracture Mechanics	<i>FRA</i>	
Reliability of Structures	<i>REL</i>	Lecture Hall III - Wine Cellar
Thermodynamics	<i>TER</i>	
Biomechanics	<i>BIO</i>	
Technology	<i>TEC</i>	Lecture Hall IV - Fitness Centrum (next door the Wine Cellar)
Military Systems	<i>MIL</i>	
Mechatronics	<i>MCT</i>	Lecture Hall V - Bowling Alley (next pavilion to the Fishmonger's)
Fluid Mechanics	<i>FLU</i>	
Poster Session	<i>POS</i>	Green House (behind the Restaurant)

# CONFERENCE TIMETABLE

## Monday – 12 May 2003

	Hotel lobby
12.00 - 19.00	Registration of participants
Plenary session	Restaurant
16.00 - 16.30	Opening ceremony
16.30 - 18.30	Keynote lectures
19.00	Dinner - Restaurant

## Tuesday - 13 May 2003

Parallel sessions	Lect.Hall I	Lect.Hall II	Lect.Hall III	Lect.Hall IV	Lect.Hall V	Hotel lobby & Green House
8.00 - 9.40	<i>DYN</i>	<i>SOL</i>	<i>FRA</i>	<i>BIO</i>	<i>MCT</i>	Registration of Participants (Hotel lobby)
9.40 - 10.20	Coffee Break					
10.20 - 12.00	<i>DYN</i>	<i>SOL</i>	<i>FRA</i>	<i>BIO</i>	<i>MCT</i>	7.30 - 18.00 Technical Exhibitions (Hotel lobby)
12.00 - 14.00	Lunch - Restaurant					8.00 - 18.00
14.00 - 15.40	<i>DYN</i>	<i>SOL</i>	<i>FRA</i>	<i>TEC</i>	<i>MCT</i>	Poster Session (Green House) 8.00 - 18.00
15.40 - 16.20	Coffee Break					
16.20 - 18.00	<i>DYN</i>	<i>SOL</i>	<i>REL</i>	<i>TEC</i>	<i>MCT</i>	
19.00	Dinner - Restaurant					
	Lecture Hall I					
19.30	J. Čejka & S. Růžička: Matter of interest in the Protected Landscape Area Žďárské Vrchy					



## W e d n e s d a y – 14 May 2003

Parallel sessions 8.00 - 9.40	Lect.Hall I	Lect.Hall II	Lect.Hall III	Lect.Hall IV	Lect.Hall V	Hotel lobby & Green House
	<i>DYN</i>	<i>SOL</i>	<i>REL</i>	<i>BIO</i>	<i>FLU</i>	
9.40 - 10.20      C o f f e e   B r e a k						7.30 - 12.00
Parallel sessions 10.20 - 12.00	Lect.Hall I	Lect.Hall II	Lect.Hall III	Lect.Hall IV	Lect.Hall V	Technical Exhibitions (Hotel lobby)
	<i>DYN</i>	<i>SOL</i>	<i>REL</i>	<i>BIO</i>	<i>FLU</i>	
12.00 - 14.00      L u n c h - R e s t a u r a n t						Poster Session (Green House)
14.00 - 19.00      F r e e   t i m e						
19.00 - 24.00      C o n f e r e n c e   D i n n e r - R e s t a u r a n t ; 20.00                      A n n o u n c e m e n t   o f   t h e   P o s t e r   S e s s i o n   w i n n e r						

## T h u r s d a y - 15 May 2003

Parallel sessions 8.00 - 9.40	Lect.Hall I	Lect.Hall II	Lect.Hall III	Lect.Hall IV	Lect.Hall V	Hotel lobby & Green House
	<i>DYN</i>	<i>SOL</i>	<i>TER</i>	<i>MIL</i>	<i>FLU</i>	
9.40 - 10.20      C o f f e e   B r e a k						7.30 - 12.00
Parallel sessions 10.20 - 12.00	Lect.Hall I	Lect.Hall II	Lect.Hall III	Lect.Hall IV	Lect.Hall V	Technical Exhibitions (Hotel lobby)
	<i>DYN</i>	<i>SOL</i>	<i>TER</i>	<i>---</i>	<i>FLU</i>	
Plenary session	Restaurant					
12.00 - 12.15	C l o s i n g   c e r e m o n y					
12.15 - 13.30	L u n c h - R e s t a u r a n t					

# PROGRAMME OF THE PRESENTATIONS

## Monday – 12 May 2003 – Restaurant

16.00 –16.30 *Opening Ceremony – Plenary session*

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16.30 - 18.30 *Keynote lectures – Plenary session* **(KEY)**  
chairmen: J. Náprstek, C. Kratochvíl & I. Dobiáš

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16.30	<b>Herle, I.:</b> <i>Constitutive models in geotechnical engineering</i>	<b>2 #164</b>
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17.10	<b>Horáček, J., et al.:</b> <i>Fundamental dynamic characteristics of human skull</i>	<b>4 #318</b>
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17.50	<b>Kratochvíl, C., Procházka, F., Březina, T.:</b> <i>Research and development of drive systems at Institute of Solid Mechanics</i>	<b>6 #323</b>
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19.00 *Dinner - Restaurant*

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## **4.1. Lecture Hall I** **(Conference Room – next-door the Restaurant)**

### **Detailed Programme**

***Dynamics***

***(DYN)***

## Tuesday – 13 May 2003 – Lecture Hall I

**8.00 – 9.40**      **Dynamics** **(DYN)**  
 chairmen:    **I. Ballo & A. Tondl**

8.00	<b>Peterka, F.:</b> <i>Most important results of the investigation of the impact oscillator dynamics obtained during finished projects GA CR and COST</i>	<b>250 #246</b>
8.20	<b>Tondl, A., Kocanda, L.:</b> <i>Self-excited two-mass system with soft impacts</i>	<b>348 #275</b>
8.40	<b>Pečínka, L., Krásný, I., Bláha, J., Kovařík, J.</b> <i>Vibration of straight piping under moving load with supercritical velocity</i>	<b>242 #128</b>
9.00	<b>Daněk, V.</b> <i>Influence of cross-coupling on aircraft dynamic stability</i>	<b>56 #117</b>
9.20	<b>Frantík, P.</b> <i>Chaotic attractor shape</i>	<b>88 #217</b>

**9.40 – 10.20**      **Coffee Break – hotel lobby**

**10.20 – 12.00**      **Dynamics** **(DYN)**  
 chairmen:    **A. Tondl & I. Ballo**

10.20	<b>Ballo, I., Chmúrny, R.</b> <i>Passage of a flexible slender rotor through critical speed</i>	<b>18 #106</b>
10.40	<b>Půst, L., Kozánek, J., Veselý, J.</b> <i>Rotor supported on magnetic bearings - numerical and experimental analysis</i>	<b>292 #268</b>
11.00	<b>Zeman, V., Hlaváč, Z.</b> <i>A contribution to the sensitivity analysis and spectral tuning of the rotating systems</i>	<b>406 #226</b>
11.20	<b>Zapoměl, J., Malenovský, E.</b> <i>Comparison of approaches to determination of hydraulic forces of long squeeze-film dampers</i>	<b>400 #140</b>
11.40	<b>Malenovský, E., Pochylý, F.</b> <i>Experimental analysis of dynamic behaviour of testing pump</i>	<b>192 #123</b>

**12.00 – 14.00**      **L u n c h - Restaurant**

## Tuesday – 13 May 2003 – Lecture Hall I

**14.00 –15.40**      ***Dynamics***      **(DYN)**  
**chairmen:**    **L. Půst & V. Zeman**

14.00	<b>Musil, M., Skala, J.:</b> <i>Parametric identification of unbalance rotating machines in operation</i>	<b>212 #270</b>
14.20	<b>Tanzer, M., Macák, P.:</b> <i>Application of the experimental identification method for MIMO systems</i>	<b>346 #103</b>
14.40	<b>Zelenka, J.:</b> <i>The computer simulation of running of railway vehicle with tilting body case type 680 at modernized lines</i>	<b>404 #276</b>
15.00	<b>Volek, J., Soukup, J., Kout, J.:</b> <i>Investigation of influence of asymmetry in case of the vibration of a resiliently supported plate - application on the vibration of vehicle IV</i>	<b>386 #199</b>
15.20	<b>Volek, J., Soukup, J.:</b> <i>Transversal impact of elastic rod on thin elastic isotropic and orthotropic rectangular plate</i>	<b>384 #200</b>

**15.40 –16.20**      ***Coffee Break – hotel lobby***

**16.20 –18.00**      ***Dynamics***      **(DYN)**  
**chairmen:**    **V. Zeman & L. Půst**

16.20	<b>Červ, J.:</b> <i>Some conditions for existence of R-waves in an orthotropic elastic half-plane</i>	<b>50 #222</b>
16.40	<b>Doležal, Z., Šíroká, V.:</b> <i>Influence of actual spur gears local tooth load on its scuffing resistance criteria</i>	<b>64 #157</b>
17.00	<b>Zadrazil, V., Doležal, Z.:</b> <i>Dynamics of gear mesh solution using MATLAB</i>	<b>398 #158</b>

**19.00**      ***Dinner - Restaurant***

## Wednesday – 14 May 2003 – Lecture Hall I

**8.00 – 9.40**      **Dynamics** **(DYN)**  
 chairmen:    **O. Fischer & S. Pospíšil**

8.00	<b>Náprstek, J., Pirner, M.:</b> <i>Dynamics of a spherical vibration absorber</i>	214 #296
8.20	<b>Pospíšil, S., Náprstek, J.:</b> <i>Empirical mode analysis of the non-stationary response of the structure vibrating in the wind</i>	270 #291
8.40	<b>Fischer, C.:</b> <i>Stochastic characterization of seismograms</i>	78 #288
9.00	<b>Makovička, D., Král, J., Makovička, D. jun.:</b> <i>Stack structure response under wind and technical seismicity effects</i>	190 #102
9.20	<b>Hauptenbuchner, B., David, M.:</b> <i>Structural dynamic identification on the example of compressor-foundation</i>	102 #317

**9.40 – 10.20**      **Coffee Break – hotel lobby**

**10.20 – 12.00**      **Dynamics** **(DYN)**  
 chairmen:    **S. Pospíšil & O. Fischer**

10.20	<b>Vymětal, A., Turek, J.:</b> <i>Continuous measurement of track stiffness using a rolling load</i>	390 #107
10.40	<b>Pirner, M., Urushadze, S.:</b> <i>Reliability assessment of CAMOSUC method</i>	252 #295
11.00	<b>Šmilauer, V., Máca, J.:</b> <i>Dynamic interaction of bridge and truck with semi-active suspension</i>	334 #248
11.20	<b>Fischer, O., Urushadze, S.:</b> <i>Vibrations of a gable of a church excited by ringing</i>	80 #306
11.40	<b>Záruba-Pfeffermann, J., Štemberk, P.:</b> <i>Experimental verification of extreme dynamic load effects on building structure</i>	402 #138

**12.00 – 14.00**      **L u n c h - Restaurant**

## Thursday – 15 May 2003 – Lecture Hall I

**8.00 – 9.40**      **Dynamics** **(DYN)**  
**chairmen: J. Barbora & J. Šklíba**

8.00	<b>Šklíba, J., Prokop, J., Pešík, L., Mácha, A.:</b> <i>Dynamic system of suspended ambulance couch</i>	<b>330 #175</b>
8.20	<b>Španiel, M., Šimek, D.:</b> <i>Passenger's seat design accordingly to FAR 23</i>	<b>336 #173</b>
8.40	<b>Švancara, P.:</b> <i>Determination of SEA coupling loss factors using Finite Element Method</i>	<b>344 #210</b>
9.00	<b>Pellant, K., Příkryl, K., Zvonek, M.:</b> <i>Psychoacoustic parameters of auto cab from mathematical modelling</i>	<b>246 #308</b>
9.20	<b>Ondrouch, J., Kaňák, J.:</b> <i>Measurement of acoustical emissions of gearboxes</i>	<b>234 #126</b>

**9.40 – 10.20**      **Coffee Break – hotel lobby**

**10.20 – 12.00**      **Dynamics** **(DYN)**  
**chairmen: J. Šklíba & J. Barbora**

10.20	<b>Polach, P.:</b> <i>Simulation of the fall of a standing passenger against the composite doors of the Škoda 14 Tr M trolleybus during an unexpected avoidance manoeuvre</i>	<b>264 #109</b>
10.40	<b>Socha, J.:</b> <i>Computing evaluation of the vehicle load influence on its steady state and transient directional behaviour</i>	<b>312 #111</b>
11.00	<b>Potěšil, A., Hlaváček, P., Hanzlík, V., Pipal, M.:</b> <i>Design optimization of the connecting rod of the engine Škoda 1,2 HTP</i>	<b>272 #292</b>
11.20	<b>Voldřich, J., Morávka, Š.:</b> <i>Analysis of frictionally excited thermoelastic instability and hot spots in automotive disk brakes</i>	<b>382 #116</b>
11.40	<b>Mevald, J., Barbora, J., Blekta, J., Krutský, T.:</b> <i>Selected problems on car bogie systems simulations</i>	<b>202 #142</b>

**12.00 – 12.15**      **Closing Ceremony - Restaurant**

**12.15 – 13.30**      **L u n c h - Restaurant**

## **4.2. Lecture Hall II (Fishmonger's)**

### **Detailed Programme**

***Mechanics of Solids***

**(SOL)**



## Tuesday – 13 May 2003 – Lecture Hall II

**8.00 – 9.40**      *Mechanics of Solids*      (SOL)  
 chairmen:    J. Kruis & Z. Fiala

8.00	<b>Fiala, Z.:</b> <i>Large deformation - large amount of unknown</i>	74 #265
8.20	<b>Rohan, E.:</b> <i>On interpolation of homogenized coefficients for analysis of large deformation</i>	296 #161
8.40	<b>Novotný, R., Brož, P.:</b> <i>Some consequences of different definition of the strain tensors</i>	230 #297
9.00	<b>Dobiáš, J., Pták, S., Gabriel, D., Dostál, Z., Vondrák, V., Horák, D.:</b> 62 #127 <i>FETI domain decomposition method applied to solution of contact problem with large displacements</i>	
9.20	<b>Poživilová, A.:</b> <i>Numerical solution of problems of finite hyperelasticity</i>	274 #315

**9.40 – 10.20**      *Coffee Break – hotel lobby*

**10.20 – 12.00**      *Mechanics of Solids*      (SOL)  
 chairmen:    Z. Fiala & J. Kruis

10.20	<b>Krejčí, T., Kruis, J., Šejnoha, J.:</b> <i>Transport processes: governing equations</i>	172 #254
10.40	<b>Kruis, J., Krejčí, T., Bittnar, Z.:</b> <i>Transport processes: numerical solution</i>	174 #249
11.00	<b>Flizikowski, J., Peszyński, K.:</b> <i>Biomechanical model for optimization of food grinder design</i>	82 #231
11.20	<b>Kalousek, Z.:</b> <i>Bending of the fibres with non-continuous dependence of the material parameters on the deformation</i>	152 #258

**12.00 – 14.00**      *L u n c h - Restaurant*

## Tuesday – 13 May 2003 – Lecture Hall II

**14.00 –15.40**      *Mechanics of Solids*      (SOL)  
 chairmen:    D. Vavřík & J. Plešek

14.00	<b>Plešek, J., Hirsch, E.:</b> <i>Visco-plastic model with time retardation for high-velocity impact loading of OFE copper specimens</i>	254 #257
14.20	<b>Kolman, R., Plešek, J., Landa, M.:</b> <i>Determination of elastic moduli by the resonant ultrasound spectroscopy method</i>	162 #129
14.40	<b>Blaháček, M., Zídek, J., Landa, M., Urbánek, P., Bajgar, V.:</b> <i>Laser-generated ultrasound in solids</i>	30 #205
15.00	<b>Vítek, K., Doubrava, K., Mareš, T., Španiel, M.:</b> <i>Numerical FEM analysis of hole - drilling method</i>	370 #299
15.20	<b>Doubrava, K., Holý, S., Václavík, J., Vítek, K., Weinberg, O.:</b> <i>Application of strain gage hole drilling method as a tool for monitoring influence of technologies on total stress state in high stressed structures</i>	66 #162

**15.40 –16.20**      *Coffee Break – hotel lobby*

**16.20 –18.00**      *Mechanics of Solids*      (SOL)  
 chairmen:    J. Plešek & D. Vavřík

16.20	<b>Pavlíček, P.:</b> <i>Height profile measurement by means of white-light interferometry</i>	240 #242
16.40	<b>Vaněk, F., Pešek, L., Cibulka, J.:</b> <i>Strain gauge measurements of deformations on rubber patterns</i>	362 #283
17.00	<b>Vavřík, D., Drdácký, M.:</b> <i>Experimental determination of stress-strain dependence of non-standard materials</i>	364 #135
17.20	<b>Bouška, P., Vokáč, M.:</b> <i>Experimental investigation of floor structures made from clay units</i>	32 #236
17.40	<b>Vokáč, M., Bouška, P.:</b> <i>Numerical simulation of floor structure with clay units Hurdis</i>	378 #235

**19.00**      *D i n n e r - Restaurant*

## Wednesday – 14 May 2003 – Lecture Hall II

**8.00 – 9.40**      ***Mechanics of Solids***      **(SOL)**  
 chairmen:    P. Koudelka & P. Procházka

8.00	<b>Procházka, P.:</b> <i>Variational formulation of the solution of composites using BEM</i>	280 #312
8.20	<b>Wierer, M., Šejnoha, M., Zeman, J.:</b> <i>Computational methods for evaluation of overall response of composite materials</i>	396 #255
8.40	<b>Lepš, M., Zeman, J., Bittnar, Z.:</b> <i>Automated design of reinforced concrete frames</i>	184 #251
9.00	<b>Marvalová, B., Tran, H.N.:</b> <i>Deformation analysis of an inflated cylindrical membrane of composite with rubber matrix reinforced by textile cords</i>	194 #204
9.20	<b>Sun, J., Růžička, M., Uher, O.:</b> <i>Nonlinear behavior analysis of filament - wound composite tubes</i>	316 #201

**9.40 – 10.20**      ***Coffee Break – hotel lobby***

**10.20 – 12.00**      ***Mechanics of Solids***      **(SOL)**  
 chairmen:    P. Procházka & P. Koudelka

10.20	<b>Procházka, P., Kugblenu, M.:</b> <i>Penalty formulation of the method of free hexagons</i>	282 #314
10.40	<b>Fajman, P.:</b> <i>Simplified model of subsoil-structure interaction</i>	70 #252
11.00	<b>Koudelka, T., Bittnar, Z.:</b> <i>Numerical methods of solution for lateral earth pressure</i>	170 #253
11.20	<b>Koudelka, P., Koudelka, T.:</b> <i>History of structure-ground interface friction during active movements - experiment EI</i>	168 #160
11.40	<b>Svoboda, B., Hrubec, K.:</b> <i>Geotechnical and Geophysical study of the stability of the rock bridge "Pravčická brána"</i>	318 #120

**12.00 – 14.00**      ***L u n c h - Restaurant***

## Thursday – 15 May 2003 – Lecture Hall II

**8.00 – 9.40**      *Mechanics of Solids*      (SOL)  
 chairmen:    J. Jíra & M. Španiel

8.00	<b>Svoboda, L., Rypl, D., Bittnar, Z.:</b> <i>Adaptive technique in nonlinear problems</i>	320 #250
8.20	<b>Novotný, J. sen., Novotný, J. jun., Zídek, R.:</b> <i>Buffer ring analysis</i>	224 #214
8.40	<b>Křiváková, J.:</b> <i>The response of thin cylindrical water filled tank to the impact of pipe element</i>	178 #213
9.00	<b>Příbyl, M., Kuliš, Z., Španiel, M., Vitek, K.:</b> <i>Tube bending simulations, when using the Finite Element Method</i>	284 #298
9.20	<b>Maxa, J. jun., Procházka, P., Neděla, V.:</b> <i>Experience with the establishment of teaching EPD</i>	198 #311

**9.40 – 10.20**      *Coffee Break – hotel lobby*

**10.20 – 12.00**      *Mechanics of Solids*      (SOL)  
 chairmen:    M. Španiel & J. Jíra

10.20	<b>Křivák, P., Bača, P., Král, P., Calábek, M.:</b> <i>Simulation of the current distribution over the electrode surface in a lead-acid cell with help of the software ANSYS - dynamic state</i>	176 #234
10.40	<b>Pech, M. et al.:</b> <i>Deformation of the mirror segments for fluorescent detector in Pierre Auger observatory by its own weight</i>	244 #243
11.00	<b>Syzrantsev, V.N., Syzrantseva, K.V., Beloborodov, A.V.:</b> <i>Using finite element analyzing for calculation of stress-strain conditions of wedge gate valves bodies</i>	324 #113

**12.00 – 12.15**      *Closing Ceremony - Restaurant*

**12.15 – 13.30**      *L u n c h - Restaurant*



## Tuesday – 13 May 2003 – Lecture Hall III

**8.00 – 9.40**      **Fracture Mechanics** **(FRA)**  
 chairmen:    V. Oliva & P. Macura

8.00	<b>Vlček, L., Kozák, V.:</b> <i>Influence of constraint effect on transfereability of fracture mechanics characteristics</i>	376 #321
8.20	<b>Seitl, S., Knésl, Z.:</b> <i>Two-parameter description of cracks in the vicinity of inhomogeneity</i>	310 #239
8.40	<b>Hutař, P., Knésl, Z.:</b> <i>Fracture behaviour of the short crack near the stress concentrator</i>	122 #240
9.00	<b>Klusák, J., Knésl, Z.:</b> <i>Comparison of stability criteria of V-notched body under combined mode of loading</i>	158 #241
9.20	<b>Brož, P., Novotný, R.:</b> <i>Crack growth aspects of mixed modes</i>	34 #112

**9.40 – 10.20**      **Coffee Break – hotel lobby**

**10.20 –12.00**      **Fracture Mechanics** **(FRA)**  
 chairmen:    P. Macura & V. Oliva

10.20	<b>Profant, T., Kotoul, M.:</b> <i>Study of interaction of periodical array of colinear cracks with periodical array of circular inclusions in particle composites</i>	278 #197
10.40	<b>Vysloužil, T., Kotoul, M.:</b> <i>3D FE analysis of bridged crack growing from the chevron notch of 3-point bending specimen</i>	392 #208
11.00	<b>Korouš, J., Zemánková, J.:</b> <i>Simulation of resistance curves using Gurson plasticity model</i>	166 #131
11.20	<b>Vavřík, D., Jakůbek, J., Pospíšil, S., Visschers, J., Zemánková, J.:</b> <i>Non-destructive observation of damage processes by X-ray dynamic defectoscopy</i>	366 #136
11.40	<b>Polák, K., Bošanský, J.:</b> <i>Causes of arising inherent defects as nuclei of brittle fracture</i>	268 #121

**12.00 –14.00**      **L u n c h - Restaurant**

## Tuesday – 13 May 2003 – Lecture Hall III

**14.00 –15.40**      **Fracture Mechanics** **(FRA)**  
 chairmen:    **M. Balda & P. Brož**

14.00	<b>Matesová, D., Keršner, Z., Rovnaníková, P., Drdlová, M.:</b> <i>Crack resistance of carbon fibres reinforced composites after high temperature loading</i>	196 #215
14.20	<b>Keršner, Z., Náhlík, L., Knésl, Z.:</b> <i>Concrete as a two-phase material: statistical/sensitivity modelling of failure</i>	154 #216
14.40	<b>Oliva, V., Materna, A., Denk, T.:</b> <i>Stress and strain cycle ahead the curved fatigue crack front in the thick wall</i>	232 #151
15.00	<b>Doubrava, R., Růžek, R.:</b> <i>Fatigue crack growth prediction in the small transport aircraft landing gear bracket</i>	68 #229
15.20	<b>Korouš, J., Bielak, O., Masák, J.:</b> <i>Creep-fatigue crack growth in a superheater header</i>	164 #130

**15.40 –16.20**      **Coffee Break – hotel lobby**

**16.20 –17.20**      **Reliability** **(REL)**  
 chairmen:    **P. Brož & M. Balda**

16.20	<b>Bína, V., Bielak, O., Korouš, J.:</b> <i>Integrity of piping systems with random number of defects exposed to internal pressure</i>	28 #163
16.40	<b>Novotný, C., Španiel, M.:</b> <i>Evaluation criteria of pipeline's burst pressure</i>	222 #165
17.00	<b>Gajdoš, E.:</b> <i>Leakage of water from linepipe as the way for determination of the size of a through crack in the wall</i>	96 #267
17.20	<b>Čižmár, K., Starek, L.:</b> <i>Vibration based damage detection via genetic algorithms</i>	52 #262
17.40	<b>Syzrantsev, V.N., Golofast, S.L.:</b> <i>Diagnostics of remainig life of machine parts</i>	322 #122

**19.00**              **D i n n e r - Restaurant**

## Wednesday – 14 May 2003 – Lecture Hall III

**8.00 – 9.40**      **Reliability** **(REL)**  
 chairmen:    **E. Gajdoš & J. Petruška**

8.00	<b>Šuta, J., Petruška, J., Janíček, L.:</b> <i>Reliability of selected ductile fracture criteria</i>	<b>342 #124</b>
8.20	<b>Fuxa, J.:</b> <i>Fracture strain diagram and strength criterion</i>	<b>94 #137</b>
8.40	<b>Macura, P., Fiala, A., Halama, R.:</b> <i>Experimental analysis of contact stresses and contact fatigue</i>	<b>188 #108</b>
9.00	<b>Frydryšek, K., et al.:</b> <i>Experimental and numerical solutions of contact fatigue</i>	<b>90 #304</b>
9.20	<b>Balda, M., Svoboda, J., Fröhlich, V.:</b> <i>Using hypotheses for calculating fatigue lives of parts exposed to combined random loads</i>	<b>16 #141</b>

**9.40 – 10.20**      **Coffee Break – hotel lobby**

**10.20 –12.00**      **Reliability** **(REL)**  
 chairmen:    **J. Petruška & E. Gajdoš**

10.20	<b>Pustka, D., Marek, P.:</b> <i>SBRA method and development of its application</i>	<b>290 #289</b>
10.40	<b>Janas, P., Krejsa, M., Kološ, I.:</b> <i>Reliability assessment of structure expressed to impact</i>	<b>130 #180</b>
11.00	<b>Václavek, L., Marek, P.:</b> <i>Reliability analysis using Monte Carlo simulation and bounded histograms of input random variables</i>	<b>358 #324</b>
11.20	<b>Špetl, J.:</b> <i>Analysis of optimization possibility of reliability testing from the aspect of their realization's costs</i>	<b>338 #203</b>

**12.00 –14.00**      **L u n c h - Restaurant**



## Thursday – 15 May 2003 – Lecture Hall III

**8.00 – 9.40**      *Thermodynamics*      (TER)  
 chairmen:    F. Jirouš & Z. Bayer

8.00	<b>Bayer, Z.:</b> <i>Description of state behavior along the critical isotherm and along the saturation curve using simple equations of state - Part I</i>	24 #278
8.20	<b>Zima, P., Maršík, F.:</b> <i>Bubble nucleation, preliminary cavitation experiments in water and mass transport modelling in the Rayleigh-Plesset equation</i>	408 #286
8.40	<b>Heller, J.:</b> <i>Changes of temperature induced in selected samples by pronounced pressure variations</i>	104 #154
9.00	<b>Hlaváč, L.:</b> <i>Model of disintegration of hot rock-like materials by water jet</i>	106 #320
9.20	<b>Jaroš, M., Charvát, P., Kouřil, T., Orel, V.:</b> <i>Experimental investigation of thermal conditions and energy efficiency of solar air collectors</i>	134 #159

**9.40 – 10.20**      *Coffee Break – hotel lobby*

**10.20 – 12.00**      *Thermodynamics*      (TER)  
 chairmen:    Z. Bayer & F. Jirouš

10.20	<b>Jirouš, F.:</b> <i>Pressure drop in flow systems of steam boilers</i>	142 #132
10.40	<b>Maxa, J. sen., Horák, V.:</b> <i>Replacement of pressure vessel gaseous content by successive filling and discharging</i>	204 #207

**12.00 – 12.15**      *Closing Ceremony - Restaurant*

**12.15 – 13.30**      *L u n c h - Restaurant*

## **4.4. Lecture Hall IV** **(Fitness Centrum)**

### **Detailed Programme**

***Biomechanics*** ***(BIO)***

***Technology*** ***(TEC)***

***Military Systems*** ***(MIL)***

## Tuesday – 13 May 2003 – Lecture Hall IV

**8.00 – 9.40**      **Biomechanics** **(BIO)**  
 chairmen:    **J. Horáček & Z. Florian**

8.00	<b>Jíra, J., Jiroušek, O., Jírová, J.:</b> <i>Finite element model of human skull for investigation of extreme stress state</i>	140 #303
8.20	<b>Kult, J., Jírová, J.:</b> <i>Comparison of mechanical aspects of different treatment methods of human finger tendon contractures</i>	182 #302
8.40	<b>Jírová, J., Micka, M., Jíra, J., Sosna, A., Pokorný, D.:</b> <i>Parametric study of acetabular cup migration</i>	146 #301
9.00	<b>Horák, Z., Sochor, M.:</b> <i>Influence of mechanical loading on the rise and development of osteoarthritis in the hip joint</i>	114 #167
9.20	<b>Jasińska-Chromańska, D., Sadyński, I.:</b> <i>Modelling and simulation of mechanical parameters of bone fracture slot using external fixation</i>	136 #322

**9.40 – 10.20**      **Coffee Break – hotel lobby**

**10.20 – 12.00**      **Biomechanics** **(BIO)**  
 chairmen:    **Z. Florian & J. Horáček**

10.20	<b>Pražák, J., Chlup, H., Musil, J.:</b> <i>Comments to tribological testing of artificial joints</i>	276 #134
10.40	<b>Horák, Z., Koukalová, J., Michalec, J., Petržela, M., Vtípil, J.:</b> <i>Development of the total spinal replacement</i>	112 #169
11.00	<b>Horný, L., Třeška, V., Vtípil, J.:</b> <i>Prediction of growth of the aortic aneurysm using artificial neural network</i>	116 #168
11.20	<b>Pásek, M., Christé, G., Šimurda, J.:</b> <i>Quantitative modelling of effect of transverse-axial tubular system on electrical activity of cardiac cells: development of model II</i>	236 #290
11.40	<b>Chlup, H., Pražák, J., Konvičková, S.:</b> <i>Physical modelling system hydraulic resistance CVS</i>	128 #133

**12.00 – 14.00**      **L u n c h - Restaurant**

## Tuesday – 13 May 2003 – Lecture Hall IV

**14.00 –15.40**      *Technology*      (TEC)  
 chairmen:    A. Pokorný & P. Bach

14.00	<b>Bach, P.:</b> <i>Dynamics of machine tools spindles</i>	14 #237
14.20	<b>Novotný, L.:</b> <i>FEM analysis of preloaded ball of ball screw apparatus</i>	226 #309
14.40	<b>Novotný, L., Marek, J.:</b> <i>FEM analysis of workpiece exchange manipulation system of vertical turning centre</i>	228 #310
15.00	<b>Pročica, M., Wójcik, Z.:</b> <i>Main problems of cutting spiral bevel gears with duplex helical method</i>	256 #325
15.20	<b>Abadjieva, E., Abadjiev, V.:</b> <i>Geometric synthesis of face helicoids</i>	10 #277

**15.40 –16.20**      *Coffee Break – hotel lobby*

**16.20 –18.00**      *Technology*      (TEC)  
 chairmen:    P. Bach & A. Pokorný

16.20	<b>Řídký, R., Petruška, J., Horský, J., Kotrbáček, P.:</b> <i>Experimental study of semi-solid steel deformation</i>	306 #184
16.40	<b>Učeň, O.:</b> <i>A mathematical model for centering the position of a rolled ring in the course of rolling the ring</i>	354 #228
17.00	<b>Pokorný, A., Učeň, O.:</b> <i>Influence of the shape of a roller gap when rolling on rolling stock straightness</i>	262 #227
17.20	<b>Ficek, F., Čech, J.:</b> <i>Computational modelling of thermal field at local annealing of casting</i>	76 #266
17.40	<b>Řebík, B.:</b> <i>Pressing line with LKTA 450 press</i>	304 #273

**19.00**      *Dinner - Restaurant*

## Wednesday – 14 May 2003 – Lecture Hall IV

**8.00 – 9.40**      **Biomechanics** **(BIO)**  
 chairmen:    **K. Dedouch & J. Jírová**

8.00	<b>Jiroušek, O., Jírová, J., Vavřík, D.:</b> <i>Development of testing equipment for measuring mechanical properties of cancellous bone</i>	144 #300
8.20	<b>Florian, Z., Kotek, V., Reinisch, M.:</b> <i>Special device for determining mechanical properties of bio-mechanical systems and materials</i>	86 #244
8.40	<b>Florian, Z., Čižmář, I., Kotek, V., Reinisch, M.:</b> <i>Determination of mechanical properties of tendon sutures</i>	84 #245
9.00	<b>Vajdák, M., Burša, J.:</b> <i>Non-linear regression application in identification of hyperelastic constitutive models of soft tissues</i>	360 #284
9.20	<b>Janovský, P., Mišun, V.:</b> <i>Modelling of the human inner ear</i>	132 #115

**9.40 – 10.20**      **Coffee Break – hotel lobby**

**10.20 – 12.00**      **Biomechanics** **(BIO)**  
 chairmen:    **J. Jírová & K. Dedouch**

10.20	<b>Damašek, A., Burda, P.:</b> <i>Finite element modelling of viscous incompressible fluid flow in glottis</i>	54 #263
10.40	<b>Horáček, J., Šidlof, P.:</b> <i>Numerical simulation of self-oscillations of human vocal folds based on aeroelastic theory</i>	110 #206
11.00	<b>Dedouch, K., Horáček, J., Vampola, T.:</b> <i>Finite element model of male vocal tract considering clefting and interaction between hard palate and acoustic spaces</i>	60 #198
11.20	<b>Vokřál, J., Černý, L., Měřínská, S.:</b> <i>Acoustic analysis of velopharyngeal insufficiency</i>	380 #110
11.40	<b>Příkryl, K., Mišun, V.:</b> <i>Modelling of production of Czech formants by vocal folds model</i>	288 #307

**12.00 – 14.00**      **L u n c h - Restaurant**

## Thursday – 15 May 2003 – Lecture Hall IV

**8.00 – 9.40**      *Military Systems*      (MIL)  
chairmen:    F. Peterka & J. Kalous

8.00	<b>Čech, V. sen., Smolík, O.:</b> <i>Dynamic quality analysis of the elevating platform truck</i>	48 #114
8.20	<b>Chalupa, M., Vlach, R., Kotek, V.:</b> <i>Choice parameters influence at vehicle track behaviour</i>	124 #152
8.40	<b>Kalous, J.:</b> <i>Simulation of fuel consumption in the 3rd generation mobile power stations</i>	150 #305
9.00	<b>Weiter, A.:</b> <i>Vehicle dependability: related cost analysis and requirements optimization</i>	394 #155

**9.40 – 10.20**      *Coffee Break – hotel lobby*


**12.00 – 12.15**      *Closing Ceremony – Restaurant*

**12.15 – 13.30**      *L u n c h - Restaurant*

## **4.5. Lecture Hall V** **(Bowling Alley)**

### **Detailed Programme**

***Mechatronics*** **(MCT)**

***Fluid Mechanics*** **(FLU)**

## Tuesday – 13 May 2003 – Lecture Hall V

**8.00 – 9.40**      *Mechatronics*      (MCT)  
 chairmen:    C. Kratochvíl & J. Tůma

8.00	<b>Březina, T., Houška, P., Singule, V., Sedlák, P.:</b> <i>Walking gait of four-legged robot obtained through Q-learning</i>	36 #193
8.20	<b>Houška, P., Ehrenberger, Z., Březina, T., Singule, V.:</b> <i>The use of leg landing information for walking robot control</i>	118 #188
8.40	<b>Grepl, R., Ondrůšek, Č.:</b> <i>Inverse kinematic modelling in SimMechanics and application for robotic mechanisms</i>	98 #187
9.00	<b>Březina, T., Krejsa, J.:</b> <i>The control of active magnetic bearing using two-phase Q-learning</i>	38 #194
9.20	<b>Věchet, S., Miček, P., Březina, T.:</b> <i>Using modified Q-learning with LWR for inverted pendulum control</i>	368 #186

**9.40 – 10.20**      *Coffee Break – hotel lobby*

**10.20 – 12.00**      *Mechatronics*      (MCT)  
 chairmen:    J. Tůma & C. Kratochvíl

10.20	<b>Šeda, M., Dvořák, J.:</b> <i>Robot navigation using genetic algorithm and case-based reasoning</i>	328 #196
10.40	<b>Szabó, Š., Knoflíček, R.:</b> <i>Design conception of multiprocessor control system for autonomous mobile robot</i>	326 #125
11.00	<b>Belda, K., Stejskal, V.:</b> <i>Singular cases of the planar parallel robot</i>	26 #105
11.20	<b>Bartko, R.:</b> <i>Solution of inverse kinematic problem of manipulator in MATLAB</i>	22 #259
11.40	<b>Němeček, M.:</b> <i>Kinematic accuracy of a simple open chain by using automatic differentiation</i>	220 #328

**12.00 – 14.00**      *L u n c h - Restaurant*



## Tuesday – 13 May 2003 – Lecture Hall V

**14.00 –15.40**      *Mechatronics*      (MCT)  
 chairmen:    T. Březina & Z. Ehrenberger

14.00	<b>Bubák, A. jun.:</b> <i>The axially compliant suspension for secondary parts of linear motors</i>	<b>40 #260</b>
14.20	<b>Bubák, A. jun., Příklopil, A.:</b> <i>Mathematical models of machine tool drives with ball screws</i>	<b>44 #272</b>
14.40	<b>Souček, P., Bubák, A. jun.:</b> <i>Control aspects of linear motors with an axially compliant suspension of their secondary part</i>	<b>314 #327</b>
15.00	<b>Holka, H., Peszyński, K.:</b> <i>Minimise of vibration of some selected points of the discrete - continuous systems by means of the structure synthesis of the receptances</i>	<b>108 #230</b>
15.20	<b>Tůma, J.:</b> <i>Numerical integration and differentiation of sampled time signals by using FFT</i>	<b>352 #202</b>

**15.40 –16.20**      *Coffee Break – hotel lobby*

**16.20 –18.00**      *Mechatronics*      (MCT)  
 chairmen:    Z. Ehrenberger & T. Březina

16.20	<b>Votrubec, R.:</b> <i>Identification of damper with magnetoreological fluid</i>	<b>388 #285</b>
16.40	<b>Feník, Š., Blesák, P., Starek, L.:</b> <i>A comparison of PID and PPF controllers in the field of vibration suppression</i>	<b>72 #264</b>
17.00	<b>Bubák, A. sen.:</b> <i>New knowledge in control method of ŽĎAS forging presses</i>	<b>42 #261</b>
17.20	<b>Mrázek, P.:</b> <i>Control mechanism for the step and continuous change of the stitch density of knitted fabric</i>	<b>208 #282</b>
17.40	<b>Barborák, O.:</b> <i>Kinematic parameters of needle mechanism of invisible stitching sewing machine</i>	<b>20 #104</b>

**19.00**      *D i n n e r - Restaurant*

## Wednesday – 14 May 2003 – Lecture Hall V

**8.00 – 9.40**      *Fluid Mechanics*      (FLU)  
 chairmen:    J. Příhoda & V. Uruba

8.00	<b>Pochylý, F., Malenovský, E., Paulíková, S.:</b> <i>A stability of the flow in the thin circular gap</i>	260 #170
8.20	<b>Pochylý, F., Klas, R., Habán, V.:</b> <i>Solution of the flow in the thin gap between rotating shaft and flexible coating</i>	258 #171
8.40	<b>Kučera, P., Malenovský, E., Pochylý, F.:</b> <i>The static equilibrium position of the center of the shaft of cavitated and uncavitated journal bearings</i>	180 #183
9.00	<b>Rak, V., Malenovský, E., Pochylý, F.:</b> <i>Oil film flow stability of long lemon and offset bearings</i>	294 #189
9.20	<b>Müller, J., Malenovský, E., Pochylý, F.:</b> <i>Analysis of the numerical stability in the solutions of the squeeze film damper</i>	210 #190

**9.40 – 10.20**      *Coffee Break – hotel lobby*

**10.20 – 12.00**      *Fluid Mechanics*      (FLU)  
 chairmen:    V. Uruba & J. Příhoda

10.20	<b>Zubík, P., Šulc, J.:</b> <i>The measurement of flow parameters in square cross section bend</i>	410 #153
10.40	<b>Příhoda, J., Sedlář, M.:</b> <i>Prediction of turbulent flow in a curved channel using various turbulence models</i>	286 #271
11.00	<b>Rudolf, P.:</b> <i>Analysis of flow in a square-sectioned elbow</i>	300 #148
11.20	<b>Štigler, J.:</b> <i>Flow of mixture through bifurcation</i>	340 #172
11.40	<b>Peszyński, K., Wawrzyniak, S.:</b> <i>Continuous visualization of flow in power fluidic elements and basic analysis</i>	248 #232

**12.00 – 14.00**      *L u n c h - Restaurant*

## Thursday – 15 May 2003 – Lecture Hall V

**8.00 – 9.40**      *Fluid Mechanics*      (FLU)  
 chairmen:    F. Pochylý & P. Vlasák

8.00	Vlasák, P., Berman, V., Chára, Z.: <i>Pipeline transport of fossile fuels</i>	374 #143
8.20	Mík, V.: <i>Effect of the heat transfer on the laminar flow in the entrance region of a circular tube</i>	206 #147
8.40	Lukerchenko, N., Chára, Z., Vlasák, P.: <i>3D mathematical model of spherical particle saltatory movement in open channel with rough bed</i>	186 #144
9.00	David, J., Filip, P.: <i>Non-Newtonian liquids: determination of a value of viscosity characterising the initial newtonian plateau</i>	58 #146
9.20	Chára, Z., Vlasák, P.: <i>Experimental assignment of total drag coefficients of bodies embedded in a free surface stream</i>	126 #145

**9.40 – 10.20**      *Coffee Break – hotel lobby*

**10.20 – 12.00**      *Fluid Mechanics*      (FLU)  
 chairmen:    P. Vlasák & F. Pochylý

10.20	Jonáš, P., Mazur, O., Uruba, V.: <i>Conditional analysis of the wall friction histograms in transitional boundary layers</i>	148 #219
10.40	Uruba, V., Jonáš, P., Mazur, O.: <i>Preliminary results on experimental investigation of a jet - shear flow interaction</i>	356 #218
11.00	Haluza, M.: <i>The pressure and kinetic specific energy distribution behind the impeller</i>	100 #174

**12.00 – 12.15**      *Closing Ceremony - Restaurant*

**12.15 – 13.30**      *L u n c h - Restaurant*

## **4.6. Green House**

**(behind the Restaurant)**

***Poster Session***

***(POS)***

**Note:**

All of the posters exhibited at the Conference will be accepted into the competition for the **Prize of the Managing Director of the ŽĎAS Company**. The special committee – under chairmanship of **Mr. Ivan Trajtel, MSc.**, technical director of the ŽĎAS company – will conclude the assessment of the posters exhibited on **Wednesday at 13.30**.

## 13 – 14 May 2003 – Green House

*Poster exhibition: Tuesday 8.00 - Wednesday 18.00*

chairmen:            **I. Dobiáš & F. Laryš**

<b>BIO</b>	<b>Biomechanics</b>	
<b>1</b>	<b>Sedláček, R., Rosenkrancová, J.:</b> <i>Evaluation of the wear resistance with peek and zirconia ceramics</i>	<b>308 #150</b>
<b>2</b>	<b>Fuis, V., Hlavoň, P.:</b> <i>Influence of the measured contact cone shape deflections of the hip joint endoprosthesis on the stress and reliability values</i>	<b>92 #280</b>
<b>3</b>	<b>Návrat, T., Florian, Z.:</b> <i>Stress-strain analysis of physiological HIP joint with effect of uncertain input material characteristics</i>	<b>216 #182</b>
<b>4</b>	<b>Šlechtová, M.:</b> <i>Computational modelling of the backbone element with applied fixator</i>	<b>332 #211</b>
<b>5</b>	<b>Tošovský, J., Florian, Z.:</b> <i>Detection mechanical properties of MACS - twin screw implant</i>	<b>350 #179</b>
<b>6</b>	<b>Rosenkrancová, J., Růžička, P., Sedláček, R., Žák, J.:</b> <i>The effect of calcitonin on the bone mechanical resistance</i>	<b>298 #166</b>
<b>7</b>	<b>Ryšavý, P., Burša, J.:</b> <i>Stress-strain analysis of surgical connection of arteries</i>	<b>302 #293</b>
<b>DYN</b>	<b>Dynamics</b>	
<b>8</b>	<b>Čech, V. jun.:</b> <i>Measurement of mechanical vibration with six dgrees of freedom</i>	<b>46 #178</b>
<b>FLU</b>	<b>Fluid Mechanics</b>	
<b>9</b>	<b>Polanský, J., Tajč, L., Rudas, B.:</b> <i>Losses in transition segments between stages with different admission rates</i>	<b>266 #223</b>
<b>10</b>	<b>Jeník, J., Polanský, J., Jůza, Z.:</b> <i>Control of the steam mass flow through the turbine stage</i>	<b>138 #281</b>

## 13 – 14 May 2003 – Green House

*Poster exhibition: Tuesday 8.00 - Wednesday 18.00*

chairmen:            **I. Dobiáš & F. Laryš**

<b>FRA</b> <i>Fracture Mechanics</i>	
<b>11</b>	Němec, J., Šperl, M.: <span style="float: right;">218 #274</span> <i>Fatigue analysis of defects in pipe welds from view of position and geometry</i>
<b>12</b>	Klusák, J., Seidl, S., Hutař, P., Náhlík, L., Knésl, Z.: <span style="float: right;">160 #238</span> <i>Comparison of fracture behaviour of a crack and general singular stress concentrators</i>
<b>MCT</b> <i>Mechatronics</i>	
<b>13</b>	Huták, P., Vorel, P.: <span style="float: right;">120 #192</span> <i>Traction drive of an electric vehicle using an ultracapacitor</i>
<b>14</b>	Vlach, R., Ondrůšek, Č.: <span style="float: right;">372 #181</span> <i>Control of electric machine ventilation using artificial intelligence</i>
<b>15</b>	Patočka, M., Huták, P.: <span style="float: right;">238 #191</span> <i>Levitation electromagnet</i>
<b>16</b>	Klíma, B., Stupka, R.: <span style="float: right;">156 #195</span> <i>Potentiality of AC servodrives motion irregularity elimination by compensation of inverter nonlinearities</i>
<b>17</b>	Miček, P., Věchet, S., Březina, T.: <span style="float: right;">204 #185</span> <i>The using some approximating methods by inverse modelling</i>
<b>SOL</b> <i>Mechanics of Solids</i>	
<b>18</b>	Bača, P., Křivák, P., Král, P., Calábek, M.: <span style="float: right;">12 #233</span> <i>Simulation of the current distribution over the electrode surface in a lead-acid cell with help of the software ANSYS - static state</i>
<b>19</b>	
<b>20</b>	