

Scientific Society for Mechanical Engineering  
Department of Rolling Stock

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*12TH INTERNATIONAL  
CONFERENCE ON*  
**RAILWAY BOGIES AND  
RUNNING GEARS**



**CONFERENCE PROGRAM**

<https://events.gteportal.eu/en/bogie2022/>

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**5 - 8 SEPTEMBER, 2022  
BUDAPEST, HUNGARY**

**12th International Conference on  
Railway Bogies and Running Gears**  
*hosted by the*  
**Department of Rolling Stock, SSME**  
**Budapest, Hungary,**  
**5 - 8 September, 2022**

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*Patrons of the Conference:*

**Prof. László PALKOVICS**

Minister of Technology and Industry

**Mr. Szilárd KÖVESDI**

CEO of the GYSEV Co.

**Mr. Péter NAGY**

Managing Director of the Stadler Magyarország Ltd.

**Mr. István SCHWARTZ**

CEO of the Dunakeszi JJ Ltd.

*President of the Conference:*

**Prof. András SZABÓ** (Hungary)

*Co-Chairman of the Conference:*

**Prof. Lajos BORBÁS** (Hungary)

*International Scientific Committee:*

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**Prof. Akira MATSUMOTO** (Japan),

**Prof. T.X. MEI** (United Kingdom),

**Prof. Sergiy V. MYAMLIN** (Ukraine),

**Prof. Oldrich POLACH** (Switzerland),

**Prof. Christian SCHINDLER** (Germany),

**Prof. Nalinaksh S. VYAS** (India).

*Organising Committee:*

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**Dr. József CSIBA,**

**Mr. Tamás DEMUS,**

**Mr. Péter FERENCZ,**

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**Mr. András SCHINDLER,**

**Ms. Orsolya SZÉKELY,**

**Dr. Gergely TULIPÁNT,**

**Dr. Zoltán ZÁBORI.**

# CONFERENCE PROGRAM

## FIRST DAY

5 September, 2022 Monday

### OPENING CEREMONY 10:00

**SZABÓ, A.** (Hungary)

Presidential opening speech

### PATRONS' FESTIVE ADDRESSES

**SZABÓ, A.** (Hungary), **BORBÁS, L.** (Hungary)

In Memoriam Prof. István Zobory

### Preparation Break 10:45

### SESSION LECTURES 11:00

*Session Chairman: Prof. András Szabó*

*Session Secretary: Mr. Péter Ferencz*

**ITO, S. – FUJIMOTO, T. – SHINAGAWA, D. – SHIMOKAWA, Y. – MINAMI, H. – KONDO, O. – IOKIBE, G. – NAKAGAWA, J.** (Japan)

Development of a bogie frame monitoring system using a stress estimation method *-on-line*

**MYAMLIN, S. V. – BURES, F.** (Ukraine)

Development of universal railway bogies for autonomous traction modules – *on-line*

**KUMAR, R. – YADAV, O. P. – PANDEY, M. – VYAS, N. S.** (India)

Suspension failure detection in railway bogies using artificial neural network – *on-line*

### Taking CONFERENCE PHOTO: 12:20

**Lunch Break: 12:30**

## SESSION LECTURES 14:00

*Session Chairman: Prof. Lajos Borbás*

*Session Secretary: Mr. István Németh*

**MAKINO, T. – KATO, T. – HASEGAWA, S. –  
YAMAZAKI, Y. – KIKKO, S. – SHIMOKAWA, Y.**  
(Japan)

Partial safety factor based estimation method of  
the fatigue life and failure probability of welds in  
railway bogie frames – *on-line*

**MYAMLIN, S. V. – MANKEVICH, N.** (Ukraine)

Development of the design of freight car bogies for  
different tracks *on-line*

**SCHINDLER, Ch.** (Germany)

In Memoriam Prof. Otmar Krettek – *on-line*

## Coffee Break: 15:00

## SESSION LECTURES 15:20

*Session Chairman: Dr. Oldrich Polach*

*Session Secretary: Mr. Péter Ferencz*

**SZABÓ, A.** (Hungary)

Simple model and computation procedure of the  
starting and stopping of the railway wheel

**CSÉPKE, R.** (Hungary)

Analysis of tram rail-wheel contact geometry in  
Hungarian country-side

**TILLMETZ, K.** (Switzerland) – **CICHON, M.** (Ger-  
many)

Safety against derailment of rack railways with spe-  
cial consideration of helix twist of track

Evening Program 18:00

## **CONFERENCE RECEPTION**

at the **DANUBIUS HOTEL HUNGARIA**

## **SECOND DAY**

6 September, 2022 Tuesday

### **SESSION LECTURES 9:00**

*Session Chairman: Prof. Zoltán Zábori*

*Session Secretary: Mr. Máté M. Szűcs*

**YADAV, O. P. – KUMAR, R. – VYAS, N. S. – BHATIA, M.** (India)

A feasibility study on condition monitoring of railway disc brake system

**MAZZEO, F. - SANTELIA, M. – CONFALONIERI, G. – VIGNATI, M. – MELZI, S.** (Italy)

Multi-body analysis of a brake rigging mechanism of a freight train

**KRÉMER, M.** (Hungary)

New Bogie construction requirements considering advanced brake functions

**NÉMETH, I.** (Hungary)

Vibration Attenuation of Disc-Brake Systems

**Coffee Break: 10:20**

### **SESSION LECTURES 10:50**

*Session Chairman: Prof. Nalinaksh S. Vyas*

*Session Secretary: Mr. István Németh*

**NAGY, A. – KOVÁCS L. - TURCSÁN, T. – TAKÁCS, L.** (Hungary)

Computer aided fatigue analysis and validation of a welded bogie structure

**MICHÁLEK, T. - KOHOUT, M. - ŠLAPÁK, J. - VÁGNER, J. - PULDA, J. - TÁBORSKÝ, J. – KRÁLÍK, M.** (Czech Republic)

Experimental measurement and simulation of running resistance of container trains

**M. SZÚCS, M. – ZÁBORI, Z.** (Hungary)

Dynamical investigation of a railway wheelset running in curve

### **Lunch Break: 12:20**

### **SESSION LECTURES 14:00**

*Session Chairman: Prof. József Csiba*

*Session Secretary: Mr. Máté M. Szűcs*

**RANGANATHAN, P. – SCHINDLER, Ch.** (Germany)

An Unconventional Roller Test-rig for the Investigation of Rolling Contact Fatigue and Wear Phenomena in Railway Wheels and Rails

**FERENCZ, P.** (Hungary)

Analysis aspects of vertical dynamics model implementation into simulation methods to assess influences of secondary suspension system anomalies on wheel profile wear

**BUZZI, C. – DUTZLER, A. – FAETHE, T. – LASSACHER, J. – LEITNER, M. – WEBER, F. J.** (Austria)

Development of a tool for estimating the characteristic curves of rubber-metal parts

### **Coffee Break: 15:00**

### **SESSION LECTURES 15:20**

*Session Chairman: Prof. Lajos Borbás*

*Session Secretary: Mr. Péter Ferencz*

**BÁRDOS, K. – BORBÁS, L.** (Hungary)

On current activities of the Hungarian Scientific Society for Mechanical Engineering

**Introduction presentation of exhibitor Companies**

**Evening Program**

***NARROW-GAUGE-RAILWAY  
PARTY***

Buses leave the Conference site at 16:00

Travel with historical train on the  
MÁV Children's Railway line.

Buses return to the Hotel by cca. 19:30 and dinner at the

Danubius Hotel Hungaria.

# THIRD DAY

7 September, 2022 Wednesday

## SESSION LECTURES 9:00

*Session Chairman: Prof. Nalinaksh S. Vyas*

*Session Secretary: Mr. István Németh*

**DING, X. – NETTER, H. – CHEN, G. – SUN, Q. -  
CAO, X. – MARKERT, B** (Germany)

Research of the aerodynamic load influence on the car-body hunting motion of high-speed train

**KOLBE, T.** (Germany)

From instability to low frequency body motion -  
Contact geometry versus design of the vehicle

**CHVOJAN J.** (Czech Republic)

Strength verification of dynamically stressed components of rolling stocks outside the mainstream activities of dynamic testing laboratory VZU Plzen

**Coffee Break: 10:10**

## SESSION LECTURES 10:40

*Session Chairman: Prof. Zoltán Zábóri*

*Session Secretary: Mr. Máté M. Szűcs*

**NÉMETH, G. – MARX, J. – WEBER, F. J.** (Austria)  
Prisma SinusJet Gen 3.0 High-Speed Wheelset Testing. First Experiences and Outlook

**GIL, P. – RAKOWITSCH, M. – SCHINDLER, Ch.**  
(Germany)

Experimental Investigation on the Formation of Railway Wheel Polygonisation

**BORBÁS, L. – FICZERE, P.** (Hungary)

Investigation of the pressing process of railway wheels using photostress analysis

**Lunch Break: 12:00**



## **SESSION LECTURES 14:00**

*Session Chairman: Prof. Lajos Borbás*

*Session Secretary: Mr. Péter Ferencz*

**NAGY, P.** (Hungary)

Introduction presentation to the Stadler BRCC bogie workshop and activities at Szolnok, Hungary

*Afternoon and Evening Program:*

*Visiting the*

**STADLER MAGYARORSZÁG Ltd.**

**BOGIE REVISION CENTRE OF  
COMPETENCE WORKSHOP**

**at Szolnok**

*After the visit:*

**COUNTRY CONFERENCE  
BANQUET**

Buses leave the conference site at 14:30

Buses return to Danubius Hotel Hungaria

cca. at 22:00

# **FOURTH DAY**

**8 September, 2022 Thursday**

**SESSION LECTURES 10:00**

*Session Chairman: Prof. András Szabó*

*Session Secretary: Mr. Tamás Demus*

**DEMUS, T.** (Hungary)

Estimation of input data for dynamic simulations based on field measurement data

**ZÁBORI, Z.** (Hungary)

Investigation of a Derailment Process of a Railway Wheelset Considering the Effect of the Track Supporting Stiffness

**SCHNEIDER, P. – STRATMANN, I. – WEGENER, M. – SCHNEIDER, P. – SCHINDLER, Ch.** (Germany)

Identification and parameterization of wear mechanisms by scattered light measurements on a single-wheel roller test rig

**WEBER, F.J. – STEINACHER, M. – STROMMER, K.** (Austria)

Light weight construction: Innovative solutions for core components of railway bogies (Siemens Mobility Austria, Graz)

**Lunch Break: 12:00**

**CLOSING ADDRESS 14:00**

*by Conference President Prof. András Szabó  
Farewell Drink*