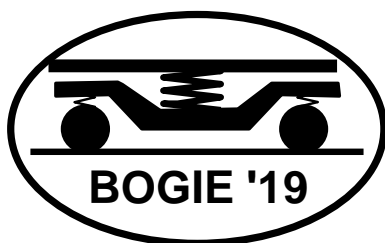


Scientific Society of Mechanical Engineers  
Department of Rolling Stock

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*11TH INTERNATIONAL  
CONFERENCE ON*  
**RAILWAY BOGIES AND  
RUNNING GEARS**



**SECOND CIRCULAR  
AND  
PRELIMINARY PROGRAMS**

(WEB info: [www.gteportal.eu/bogie19](http://www.gteportal.eu/bogie19))

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**9 - 12 SEPTEMBER, 2019  
BUDAPEST, HUNGARY**

**11th International Conference on  
Railway Bogies and Running Gears**  
*hosted by the*  
**Department of Rolling Stock, SSME**  
**Budapest, Hungary,**  
**9 - 12 September, 2019**

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*Patrons of the Conference:*

**Prof. László PALKOVICS**

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**Mr. László SÜVEGES** (Hungary),

**Mr. Gábor TÓTH** (Hungary),

*You are kindly invited to participate* in the

## **11th INTERNATIONAL CONFERENCE ON RAILWAY BOGIES AND RUNNING GEARS**

to be held between **9 and 12 September, 2019** in **Budapest, Hungary**, hosted by the *Department of Rolling Stock* at the **Hungarian Scientific Society of Mechanical Engineers (SSME)**.

### **The Scope of the Conference**

This **eleventh** Conference (the first, second, third, fourth, fifth, sixth, seventh, eights, ninth and tenth were also held in Budapest in 1989, 1992, 1995, 1998, 2001, 2004, 2007, 2010, 2013 and 2016 resp.) will cover topics related to research, development, design, manufacturing and operation of the most sophisticated mechanical units of railway vehicles: **the bogies and the running gears**.

**The Aim of the Conference** is to offer an opportunity for the specialists in the field from all over the World to present results of their activities, both the very latest results and results achieved over the last 3 years. The Conference will also enable participants to become acquainted with the work of others, to promote further development by means of discussion and comments, and to profit from making new personal contacts. Overall the Conference will help to define new directions for future technical research and development.

### **Programme**

The papers to be lectured in the Oral Sessions, or to be exhibited in the Poster Session were selected by the **Scientific Committee** from among the paper offers received. After the lectures the participants will be free to ask questions or to make comments.

The Organising Committee would like to encourage an international exchange of information, ideas and solutions to practical problems in the **following topics**:

- Design and Operation of Bogies and Running Gears
- Powered and Trailer Bogies and Running Gears for High Speeds
- Powered and Trailer Bogies and Running Gears for Heavy Haulage
- Powered and Trailer Bogies and Running Gears for Light Rail Cars
- Non-Conventional Bogie- and Running Gear Constructions
- Special Problems of Designing Welded Bogie Frames
- Advanced Brake Systems in Bogies
- Interaction between the Brake System and the Running Gear
- Mechanics of Bogies and Running Gears
- Wheel-Rail Contact- and Wear Simulation, Optimisation and Measurement
- Prediction of Riding Stability, Riding Comfort and Riding Safety
- Advanced Control of Bogies and Running Gears
- Computer Aided Optimum Design of Bogies and Running Gears
- Strength Dimensioning of Bogies and Running Gears, Loading Conditions, Fatigue Problems, Service Life Predictions
- Fretting Fatigue in Bogies and Running Gears
- Manufacturing, Repair and Maintenance Problems of Bogies and Running Gears
- Testing and Qualification of Bogies and Running Gears
- Operation Reliability Predictions for Bogies and Running Gears

## Languages

The official languages of the Conference will be **English**.

## Exhibition

The opportunity is offered to exhibit photos and documentations, models of *products*, *technologies* and *know-how* for publicity purposes.

***If you intend to exhibit, please, send a separate letter*** to the Organising Committee, naming the *exhibition material* and indicating the *area needed*.

## Proceedings

The Proceedings will contain all the papers **in English**. The participants in the conference will receive the volume of **Extended Abstracts** at the registration on the spot, the **Proceedings containing the full papers presented**, will be sent by mail after the Conference.

## Equipment Available for the Lecturers

For the lecturers and contributors, respectively, a computer projector will be available. Usage of **PowerPoint files** is preferred. Lecturers are requested to inform the Organising Committee about their extra demand for technical aids in a letter, or at the time of their registration for the Conference, at the latest.

## Conference Site

The lectures of the Conference will be delivered at the **Conference Hall of Hotel Flamenco**, (Budapest, Distr. XI. Tas vezér str. 3 – 7.)

The Conference site can be approached by **buses: No 7 and 114, 213 and 214**, as well as by **trams: No 19 and 49**.

## Final Registration

If you have decided to take part in the **Conference**, please be so kind and fill in the enclosed **Final Registration Form** and send till **20 August 2019** *preferable as an attachment to your e-mail* to be sent to address of the **professional organizer**

**Mr. Gábor TÓTH**

managing director at the

**ÖT ÉVSZAK KFT.**

**Phone:** (36-20)-965-0785,

**e-mail:** info@otevszak.hu

**Mailing Address:** *H-1221 Budapest, Gerinc u. 24.*

**You are requested** - *even if you have sent us your preliminary registration form* - **to return us the Final Registration Form as a confirmation of your intent to participate in the Conference.**

The number of conference participants *is limited to maximum 120 persons* due to the lecture room capacity.

## Participation Fees

The participation fee of the **Conference** is **550 EUR** (for contributors only **450 EUR**), which covers the *registration, the written documents and the Proceedings, the Conference Reception, the Railway Party and the Country Conference Banquet, as well as four lunches.* The enclosed **Final Registration Form** contains **items also for the pre-conference tour and optional programs.**

### Payment for Participation and Optionals

**Participation fee and social program fees as well as extra charges for accompanying persons should be indicated in the Final Registration Form.**

The professional organiser company will be the

**"ÖT ÉVSZAK KFT.",**

Mailing Address: *H-1221 Budapest, Gerinc u. 24.*

The payment of the conference participation fee should be done by bank transfer to the:

### **ÖT ÉVSZAK KFT.**

Their bank account led at the **UniCredit Bank** is:

**IBAN: HU49 1091 8001 0000 0003 3926 0012,**

**SWIFT: BACXHUHB**

please refer to "**BOGIE '19**".

The Address of the **UniCredit Bank** is:

**H-1111 Budapest, Lágymányosi u. 2.**

A ***proof of payment should be enclosed*** to the Final Registration form. You are kindly requested to indicate ***your name and address*** on ***all money orders*** to ensure that the payment will be correctly registered.

### **Deadline for Payment of Participation Fee**

Please realise the payment of the conference participation fee till **20 August 2019**.

### **Cancellation**

In that case if a written cancellation is received till **15 August 2019**, the full **participation fee** will be refunded. If a cancellation after the prescribed date or no cancellation at all is received, there is **no possibility of returning the payment**, however, the published proceedings will be delivered. ***Replacement of the participating person is possible!***

## Accommodation

**Accommodation should individually be arranged by the participants.** The organisers have made **reservations** for accommodation for the time span 9-12 September 2019, as follows:

single-bed room/night    double-bed room/night

**Hotel Flamenco**    99 €    109 €

**e-mail:** flamenco.reservation@danubiushotels.com

**Hotel Gellért**    105 €    165 €

**e-mail:** daniel.hasitz@danubiushotels.com

**Hotel Ibis Style City**    94 €    100 €

**e-mail:** hb350-re1@accor.com

In your order, ***please indicate: BOGIE '19.***

***Booking Form*** for each hotel can be downloaded from the *home page* of **BOGIE '19** under web address:

**[www.gteportal.eu/bogie19](http://www.gteportal.eu/bogie19)**

The Hotels handle the reservation requests on a ***first come - first served*** basis. Therefore, please return the Booking Form **at your earliest convenience**, but **up to 20 August, 2019 at the latest!**



## Social Programs

### Pre-Conference Tour

8 September, Sunday, from 9<sup>00</sup>:

**DANUBE BEND** - Duration: 9.5 hours.

*Route:* Szentendre: Open Air Village Museum (on request), Margit Kovács Ceramic Museum, walk through the baroque Old Town, opportunities for shopping; Visegrád: Castle and ruins of the Palace; Esztergom: visit of Hungary's largest Basilica and Treasury or the Royal Palace. The programme include a three-course lunch and tasting Hungarian wines. Entrance fees included.

**Price: 60 Euro/person,**

8 September, Sunday, from 16<sup>00</sup> - 20<sup>00</sup>:

**Registration & Welcome Buffet at the Conference Site**

*Included in the Conference Participation Fee*

9 September, Monday, 19<sup>00</sup>:

**Conference Reception in the Hall of Hotel Flamenco**

*Included in the Conference Participation Fee*

(note: for accompanying persons the Conference Reception is at an extra charge **35 EUR/person**)

10 September, Tuesday, 17<sup>00</sup>:

buses depart from the *Conference Site* to the

**Narrow-Gauge-Railway Party**

*Included in the Conference Participation Fee*

(note: for accompanying persons the Railway Party is at an extra charge **40 EUR/person**)

**11** September, Wednesday, from 14<sup>40</sup>:

buses depart from the *Conference Site* to visit the **Knorr-Bremse Railway Vehicle Systems Hungary Co.** and after the visit to the **Country Conference Banquet.**

***Included in the Participation Fee***

(note: for accompanying persons the Country Banquet is at an extra charge **40 EUR/person**)

## **Programs for Accompanying Persons**

**9** September, Monday, from 9<sup>00</sup>:

**THE ROYAL PALACE OF GÖDÖLLŐ** – Duration: 4 hours. *Programme:* Visit of the baroque palace in Gödöllő, which was the favourite summer residence of Queen Elisabeth, popularly known as Sissi. This will take you back in the times of the Austro-Hungarian Dual Monarchy. Stroll through the palace grounds, shops for souvenirs and have a coffee and pastry in the picturesque cafeteria.

**Price: 41 EUR/person**

**10** September, Tuesday, from 14<sup>00</sup>:

**TYPICAL HUNGARIAN VILLAGE TOUR – SZENT-ENDRE** - Duration: 5 hours. *Programme:* Walk through the baroque Old Town at the bank of Danube. Opportunities for shopping. Wine-tasting of 18 regions of Hungary.

**Price: 41 EUR/person**

**11** September, Wednesday, from 10<sup>00</sup>:

**BUDAPEST SIGHT SEEING** - Duration: 3 hours.

Route: Gellért Hill (Citadel), Elisabeth Bridge, Rákóczi Street, Heroes' Square, Andrassy Street, St. Stephen's Basilica (tour inside the church), Parliament, Margaret Bridge, Fő Street (Turkish Baths), walking tour through the Castle District, Fishermen's Bastion and Matthias Church,.

**Price: 23 EUR/person**

**12** September, Thursday, from 9<sup>00</sup>:

**PUSZTA TOUR** - Duration: 8 hours. *Programme:*

Short walk in Kecskemét, then drive to the Tanya, where guests are welcomed with a traditional drink and savoury snack. Horse show, carriage ride, possibilities for horseback riding. Meal accompanied by gipsy music in the Csárda. Menu: goulash soup, rich Hungarian main course, mix-ed vegetables, salad plate, traditional Hungarian dessert, mineral water, coffee, red and white wines.

**Price: 63 EUR/person**

**Registration Time**  
at the  
**Conference Site: Hotel Flamenco**  
**Budapest, Distr.XI. Tas vezér str. 3 – 7.**

8 September 2019 - from 16<sup>00</sup> to 20<sup>00</sup>

9 September 2019 - from 7<sup>30</sup> to 15<sup>00</sup>

10 September 2019 - from 8<sup>00</sup> to 15<sup>00</sup>

11 September 2019 - from 8<sup>00</sup> to 13<sup>00</sup>

12 September 2019 - from 8<sup>00</sup> to 16<sup>00</sup>

We hope to welcome you as a participant at our Conference and that you will be enriched with a great deal of new information both in your special line and in human relations.

Should any question arise in connection with the Conference, please contact

**Prof. István ZOBORY**  
Conference President

by E-mail, phone or letter.

**Phone:** (36-1) 463-3860,  
**E-mail:** zobory.drs.gte @ gmail.com

***The Organising Committee***

***INFO*** on the **WEB:**

**[www.gteportal.eu/bogie19](http://www.gteportal.eu/bogie19)**

# PRELIMINARY PROGRAM OF THE ORAL SESSIONS

## FIRST DAY

9 September, 2019 - 9<sup>00</sup>

### OPENING CEREMONY, FESTIVE ADDRESSES

#### *Session Lectures:*

**KRETTEK, O.** (Germany)

State of Development and Trends in Running Gear Technology

**SZÁNTÓ, F.** (Australia)

Operation of a Single Air Spring Bogie

**RICHTER, W. D.** (Germany)

Design by Accident – Accident by Design

**SCHÖNHUBER, P. – ROLFF, E. – SCHINDLER, CH.**  
(Germany)

Numerical Study on the Dynamics of a Novel, High-Speed Passenger Bogie Design without Primary Suspension Spring

**BRACCIALI, A. – MAGNA, G.** (Italy)

A Really Innovative Freight Bogie

**MYAMLIN, S. V. – BUBOV, V. – MANKEVICZ, N.**  
(Ukraine)

Developing Bogie Design with Loading 25,0 t/Axle

***Making CONFERENCE PHOTO: 12<sup>30</sup> - 12<sup>40</sup>***

***Lunch Break: 12<sup>40</sup> - 14<sup>00</sup>***

**9 September, 2019 - 14<sup>00</sup>**

**BENICKY, M. – HAUPT, L – KOPAL, J.**

(Czech Republic)

Locomotive Bogies from CZ Loko Production

**ROMERO-NAVARRATE, J. – OTREMBA, F.**

(Germany)

Conceptual Design of an Active Centre Plate

**CAPEK, J. – HEPTNER, T. – MALINSKY, J.**

(Czech Republic)

Bogie for Freight Wagon

**PLOMER, J.** (Czech Republic)

*D-DART* Concept – A Way to Higher Capacity

**NEGISHI, H. – YAMADA, H. – IWANAMI, K. –**

**SHIMAMUNE, R. – SHINAGAWA, D. –**

**MIMURA, M.** (Japan)

Development of Steering Mechanism and Control Method for Active Bogie Steering

**DONGFANG, S.** (Germany)

Exploration into the Applicability of Running Dynamics of Conventional-Form Non-Powered Bogies with Very Small Wheels

*Evening Program: 18<sup>00</sup>*

## ***CONFERENCE RECEPTION***

at the

***HOTEL FLAMENCO***

Budapest, distr. XI.

Tas vezér str. 3 – 7.

## **SECOND DAY**

**10 September, 2019 - 9<sup>00</sup>**

**TANIMINE, T. – TOIDE, T. – IWATO, K. -  
SHIMOKOWA, S.** (Japan)

Development of Linkage Type Steering Bogie for  
the Linear Metro

**NÉMETH, I.** (Hungary)

Vibration of Friction Brake Systems – Modelling and  
Attenuation

**HANDOKO, Y. A. – MAHYUDDIN, A. I. –  
SUGIHARTO, A. – WIKARANA, P. – NUGRAHA,  
P. A.** (Indonesia)

Dynamics Simulation of a Light Rail Vehicle Based on  
EN-14363 Standard

**DUSZA, M.** (Poland)

Rail Vehicle Model Possibility of Safety Motion  
Analysis in the Overcritical Velocity Range

**ARAI, I. – TANIMOTO, M. – WATANABE, S. –  
MATSUDA, T. – MATSUMOTO, A. –  
MITCHITSUJI, Y.** (Japan)

Estimating Method of Wheel-Rail Friction Condition  
by Using PQ Monitoring Bogie

**BRACCIALI, A. – MAGNA, G.** (Italy)

The Liberty Wheel

***Lunch Break: 12<sup>30</sup> - 14<sup>00</sup>***

**10 September, 2019 - 14<sup>00</sup>**

**MATSUMOTO, A. – MICHITSUJI, Y. –  
ICHIYANAGI, Y. – TANIMOTO, M. – NAKI, T. –  
SATO, Y.** (Japan)

Flange Climb Derailments in Curving

**CICHON, M. G.** (Germany)

Influence of Elastic Deformations on Equivalent  
Conicity and Subsequent Conclusion for Develop-  
ment of New Wheel Profiles

**HARA, S. – NISHIMURA, K. – TERUMICHI, Y. –  
TANIFUJI, K.** (Japan)

A Comparative Study on Wear between Running on  
a Roller Rig and a Rail

**VYAS, N. S. – NAYANI, M. – SINGH, R. K.** (India)

Estimation of Wheel/Rail Forces from Vehicle Ac-  
celeration Data Using Artificial Neural Networks

**SAKAI, H.** (Japan)

Design Method for Suppressing Hunting Oscilla-  
tions Focusing on Its Damping Ratio

**MICHALEK, T. - ZELENKA, J.** (Czech Republic)

Contribution of Active Elements in Locomotive Run-  
ning Gear to Reduction of Guiding Forces

*Evening Program:*

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

Buses leave the conference site at 17<sup>30</sup>

After the Party  
buses return to the Hotels by cca. 22<sup>30</sup>



## **THIRD DAY**

**11 September, 2019 - 9<sup>00</sup>**

**KULKARNI, R. – BERG, M. – STICHEL, S.** (Sweden)  
Fault Detection and Isolation method for Vehicle Running Instability from Vehicle Dynamics Response Using Machine Learning

**PÁLINKÓ, M. – BRUNI, S. – DI GIALLEONARDO, E. – LIU, B. – KRISHNA, V. – MUÑOZ, J.** (Germany+Italy+Sweden+Spain)  
Evaluation of Passive and Mechatronic Steering Systems for 3-Axle Locomotive Bogies by Means of Multi-Body Simulation

**ITOYAMA, M. – NARITA, T. – KUMAGI, N.** (Japan)  
Condition Monitoring for Shinkansen Bogies Based on Vibration and Temperature Analysis

**JOST, F. – GRATZFELD, P.** (Germany)  
Mechatronic Guidance for Tramways using a Novel Hallsensor Array

**FOSSATI, M. – CAPELLÁN, A. – ZAPIRAIN, A.** (Spain)  
Dynamic Simulation to Structural Damage

**CSIBA, J. – BÉRES, I.** (Hungary).  
Data to the History of the Hungarian Bogie Type: *KALÁKA*

***Lunch Break: 12<sup>30</sup> - 14<sup>00</sup>***

**11 September, 2019 - 14<sup>00</sup>**

**KOVÁCS, A.** (Hungary)  
Activities of the Knorr-Bremse Railway Vehicle Systems, Hungária Ltd.

*Afternoon and Evening Program:*

*Visiting the*

***KNORR-BREMSE RAILWAY  
VEHICLE SYSTEMS, HUNGARY Ltd.***

*After the visit:*

***COUNTRY CONFERENCE  
BANQUET***

Buses leave the conference site at 14<sup>40</sup>

After the Banquet  
buses return to the Hotels by cca. 22<sup>00</sup>

## **FOURTH DAY**

**12 September, 2019 - 9<sup>00</sup>**

**WEBER, H. J. – RIEGER, M.** (Austria)

Enhanced Safety Concept for Wheel-Set Axles: The Path From Scientific Research to Innovation in Product Development

**YAMAMOTO, D.** (Japan)

The Monitoring System of Wheel/Rail Contact by Means of Thermal Imaging

**YONEMORI, H. – OYAMA, H. – ICHIKAWA, S. – NAGAMOTO, M. – MATSUOKA, A. – KAWADA, N.** (Japan)

Discussion on the Concept and Performance of Derailment Detector

**ALFI, S. – LIU, B. – BRUNI, S.** (Italy)

Condition Monitoring of Suspension Components Based on On-Board Acceleration Measurements

**FERENCZ, P.** (Hungary)

The Question of Lifetime: Extension Possibilities of Bogie Force Transmission Elements on the Basis of Condition Test Results

**KANAMORI, S. – OTSUKA, T. – ADACHI, M. – SAKANOUÉ, K.** (Japan)

Technologies for Achieving both Reliability Improvement and Weight Reduction of *N700S* Shinkansen Bogie

***Lunch Break: 12<sup>30</sup> - 14<sup>00</sup>***

**12 September, 2019 - 14<sup>00</sup>**

**SZABÓ, A. – ZOBORY, I.** (Hungary)

Analysis of the Running Safety of Narrow-Gauge Railway Vehicles in Curves of Small Radii

**12 September, 2019 - 14<sup>30</sup>**

***CLOSING ADDRESS***

***Farewell Drink***

# PRELIMINARY PROGRAM OF THE **POSTER SESSION**

**9 - 12 September, 2019**

**Daily, 13<sup>30</sup>-14<sup>00</sup>**

**CSÉPKE, R.** (Hungary)

New Regulations of the Rail/Wheel Contact  
Mechanism for Hungarian Tramway Tracks

**MIAMLIN, S. S.** (Ukraine)

Improving Bogies' Design for Narrow Gauge Rail-  
ways

**ZOBORY, I. – NAGY, D.** (Hungary)

Creep Control in Brake Operation to Avoid Wheel  
Sliding and Flattening

**FERENCZ, P.** (Hungary)

Investigations into Impacts of Bogie Secondary  
Suspension System Anomalies on Wheel Wear  
Propagation

**CHVOJAN, J.** (Czech Republic)

Tools and Professional Activities of Research and  
Testing Institute In Pilsen in the Field of  
Development and Quality Increasing of Railway  
Stocks and Their Components



# MAP OF THE *Conference Site* HOTEL FLAMENCO

