



## PROGRAM

# XVII

SCIENTIFIC-EXPERT  
CONFERENCE ON  
RAILWAYS  
RAILCON '16



October 13 - 14, 2016, Niš, Serbia



- ① Faculty of Mechanical Engineering
- ② Downtown
- ③ Bus Station
- ④ Fortress
- ⑤ University of Niš

**The XVII Conference RAILCON '16**  
**Faculty of Mechanical Engineering,**  
**Aleksandra Medvedeva 14, Niš, Serbia**  
**(GPS: 43°19'49.7"N+21°53'42.6"E)**



The Faculty of Mechanical Engineering Niš, Serbia wishes you a pleasant welcome to the

### **INTERNATIONAL XVII SCIENTIFIC-EXPERT CONFERENCE ON RAILWAYS - RAILCON '16.**

The Conference on Railways continues the tradition through its seventeenth anniversary. As in previous years, the RAILCON mission is to gather scientists and experts from the region, to observe the ongoing changes in developed railways and suggest directions for further railway development in Serbia and the region.

According to this year's Conference Program there are 71 papers written by 153 authors from Railway, University and Industry, from 13 countries, dealing with trending topics from fields of rolling stock, traffic, infrastructure, maintenance, informatics, economics, strategy, railway automation, policy and other aspects related to Railway.

We would like to recommend presentations of companies from 6 countries, who supported the organization of the Conference.

We wish the participants a successful event and a pleasant stay in Niš.

#### **Organizing Committee of RAILCON '16**

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# PROGRAM

THURSDAY, October 13, 2016

**8<sup>30</sup> – Application of Participants**  
(Lobby)

**10<sup>00</sup> – 10<sup>45</sup> Opening Ceremony**  
(Amphitheatre A)

**10<sup>45</sup> – 11<sup>30</sup> Welcome Cocktail**  
(Lobby)

**11<sup>30</sup> – 13<sup>00</sup> Plenary Session**  
(Amphitheatre A)

*Chairmen:*

*Prof. Dragomir Mandić, Prof. Ljiljana Radović, Prof. Miloš Milošević*

- **TOWARDS AUTONOMOUS OBSTACLE DETECTION IN FREIGHT RAILWAY**  
Danijela RISTIĆ-DURRANT, Adrian LEU,  
University of Bremen, Institute of Automation (IAT), Bremen, Germany  
Ivan ĆIRIĆ, Miloš SIMONOVIĆ, Vlastimir NIKOLIĆ,  
University of Niš, Faculty of Mechanical Engineering, Niš, Serbia  
Branislav BRINDIĆ, Harder Optoelectronic Group, Niš, Serbia
- **PRESENT STATE OF THE RAILWAY INDUSTRY IN SERBIA** Dušan STAMENKOVIĆ, Miloš MILOŠEVIĆ, Milan BANIĆ, University of Niš, Faculty of Mechanical Engineering, Niš, Serbia
- **ASSISTED, AUTOMATED AND AUTONOMOUS DRIVING (“TRIPLE A”) FOR RAILWAY TRAFFIC**  
Florian ESSER, Christian SCHINDLER,  
RWTH Aachen University, Institute of Rail Vehicles and Transport Systems (IFS), Aachen, Germany

**13<sup>00</sup> – 15<sup>00</sup> Break**

**15<sup>15</sup> Kick-off meeting of the Shift2Rail funded project SMART**  
**Ceremonious hall of University of Niš**  
**(Univerzitetski trg 2, Niš)**  
**(GPS: 43°19'23"+N 21°53'36"E)**

**15<sup>15</sup> – 17<sup>00</sup> Session 1 - Rolling stock I**  
(Amphitheatre B)

*Chairmen:*

*Prof. Daniel Kalinčak, Prof. Vojkan Lučanin*

- 1.1. **REVIEW OF PROPERTIES OF COLLISION ENERGY ABSORBERS - EXPERIMENTAL AND NUMERICAL RESEARCHES**  
Jovan TANASKOVIĆ, Vojkan LUČANIN, Dragan MILKOVIĆ,  
University of Belgrade, Faculty of Mechanical Engineering, Belgrade, Serbia  
Aleksandar ŽIVKOVIĆ,  
GOŠA Machinery and Equipment, Smederevska Palanka, Serbia
- 1.2. **BASIC ASPECTS OF PROBLEM OF CONTINUOUS MEASUREMENT OF WHEEL-RAIL CONTACT FORCES**  
Milan BIŽIĆ, Dragan PETROVIĆ,  
University of Kragujevac, Faculty of Mechanical and Civil Engineering in Kraljevo, Serbia  
Dušan STAMENKOVIĆ,  
University of Niš, Faculty of Mechanical Engineering, Serbia
- 1.3. **ENERGY CONSUMPTION AND TRAVEL TIME - IMPORTANT FACTORS FOR DECISION ON PROPER TRANSPORT MODE SELECTION**  
Juraj GREŇČÍK, Peter VOLNA, Martin MIKOLAJČÍK,  
University of Žilina, Faculty of Mechanical Engineering, Žilina, Slovakia
- 1.4. **OPERATIONAL REGIMES OF MOTIVE POWER UNITS AND THEIR UNCONVENTIONAL TRACTION DRIVES**  
Daniel KALINČÁK, Martin MIKOLAJČÍK, Juraj GREŇČÍK,  
University of Žilina, Faculty of Mechanical Engineering, Žilina, Slovakia
- 1.5. **RUNNING RESISTANCE FROM FULL-SCALE MEASUREMENTS OF PASSENGER DIESEL MOTOR UNIT 711**  
Marija VUKŠIĆ POPOVIĆ,  
–, Belgrade, Serbia  
Ivana ATANASOVSKA,  
Mathematical Institute of SASA, Belgrade, Serbia  
Milan PLAVŠIĆ,  
–, Belgrade, Serbia

- 1.6. **STATIC STRENGTH STUDY OF BODY OF UNIVERSAL FLAT WAGON**  
Valeri STOILOV, Svetoslav SLAVCHEV, Sanel PURGIĆ,  
Technical University Sofia, Bulgaria
- 1.7. **METHODOLOGY FOR DETERMINING THE PARAMETERS OF THE BRAKING SYSTEM OF RECONSTRUCTED FREIGHT WAGONS**  
Kiril VELKOV, Oleg KRASTEV, Sanel PURGIĆ,  
Technical University Sofia, Bulgaria
- 1.8. **DESIGN SPECIFICITY OF EAMS-Z SELF-PROPELLED WAGON**  
Saša RADULOVIĆ, Goran SIMIĆ, Snežana GOLUBOVIĆ,  
University of Belgrade, Faculty of Mechanical Engineering, Belgrade  
Serbia  
Dražen VIDOVIĆ,  
Railway carriages factory Čakovec, Croatia
- 1.9. **INFLUENCE OF MEASUREMENT METHOD AND DATA PROCESSING ON THE RESULTS OF BRAKE PERFORMANCE TEST**  
Saša RADULOVIĆ, Goran SIMIĆ, Dragan MILKOVIĆ, Vojkan LUČANIN,  
University of Belgrade, Faculty of Mechanical Engineering, Belgrade,  
Serbia

**15<sup>15</sup> – 17<sup>00</sup> Session 3 – Infrastructure I**  
(Ceremonious Room)

*Chairmen:*

*Prof. Zdenka Popović, Prof. Boban Anđelković*

- 3.4. **RAILWAY INFRASTRUCTURE DEVELOPMENT IN SERBIA - CHALLENGES AND OPPORTUNITIES**  
Nebojša BOJOVIĆ, Dragana MACURA,  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia
- 3.5. **REGISTER OF RAILWAY INFRASTRUCTURE**  
Milan POPOVIĆ, Mirjana DŽUDOVIĆ,  
Directorate for railways, Belgrade, Serbia
- 3.6. **DETERMINATION OF SLEEPER SUPPORT CONDITIONS**  
Luka LAZAREVIĆ, Zdenka POPOVIĆ, Milica VILOTIJEVIĆ,  
University of Belgrade, Faculty of Civil Engineering, Belgrade, Serbia

- 3.7. **PERFORMANCE REQUIREMENTS FOR RAIL FASTENING SYSTEMS ON EUROPEAN RAILWAY NETWORK**  
Milica VILOTIJEVIĆ, Zdenka POPOVIĆ, Luka LAZAREVIĆ,  
University of Belgrade, Faculty of Civil Engineering, Belgrade, Serbia
- 3.8. **CERTIFICATION OF RAILWAY SIGNALLING SYSTEMS ACCORDING TO EU LEGISLATIVE AND CENELEC STANDARDS**  
Vladimir HABUŠ,  
ALTPRO d.o.o, Zagreb, Croatia  
Dejan TOŠIĆ,  
Directorate for Railways, Belgrade, Serbia
- 3.9. **RELOCATION OF THE NIS - PRESEVO RAILWAY LINE BETWEEN STATIONS PREDEJANE AND DZEP FOR THE PURPOSE OF THE CONSTRUCTION OF THE HIGHWAY E75 ON CORRIDOR 10**  
Aleksandar NAUMOVIĆ, Milivoj SIRADOVIĆ,  
Corridors of Serbia, Belgrade, Serbia  
Siniša MARIĆ,  
Infrastructure of Serbian Railways, Belgrade, Serbia
- 3.10. **SPATIAL CRITERIA FOR EVALUATION IN GENERAL DESIGN OF RECONSTRUCTION AND MODERNIZATION OF RAILWAY LINES**  
Ana VULEVIĆ,  
Institute of Transportation CIP, Belgrade, Serbia  
Vidoje JOVIČIĆ,  
Serbian Railways, Belgrade, Serbia
- 3.11. **LOCATION OPTIMALITY EVALUATION OF TRACK RADIO STATIONS IN SERBIAN RAILWAY NETWORK**  
Ranko BABIĆ,  
The Railway College of Vocational Studies, Belgrade, Serbia  
Nenad PETROVIĆ,  
Infrastructure of Serbian Railways, Belgrade, Serbia
- 3.12. **STRATEGY IMPLEMENTATION IN THE RAILWAY PROJECTS**  
Tatjana SIMIĆ, Tatjana MIKIĆ,  
CeSCOWI, Belgrade, Serbia

**17<sup>00</sup> – 17<sup>15</sup> Coffee Break**  
(Lobby)

**17<sup>15</sup> – 19<sup>00</sup> Session 2 / 3*****Traffic and Transport I / Infrastructure II  
(Amphitheatre B)*****Chairmen:***Priv. doz. Andreas Schoebel, Prof. Milan Banić***2.1. MAINTENANCE OPTIMISATION OF CAPILLARY RAILWAY NETWORK WITH CLUSTERING METHOD**

Danijela ĐORIĆ, Abdessamad AIT EL CADI, Abdelhakim ARTIBA,  
Said HANAFI, Nenad MLADENović,  
Université de Valenciennes et du Hainaut-Cambrésis, France

**2.2. IMPLEMENTING THE GOOGLE MAPS API TO IMPROVE VEHICLE ROUTING PROBLEM: DISTANCE/TRAVELTIME MATRIX**

Teodor BEROV,  
Todor Kableshkov University of Transport, Sofia, Bulgaria

**2.3. RAIL TRAFFIC FLOW OPTIMISATION BY KRONECKER ALGEBRA FOR IRISH RAIL**

Andreas SCHÖBEL, Jelena AKSENTIJEVIĆ,  
OpenTrack Railway Technology, Vienna, Austria

**2.4. RAILWAY AS A SUSTAINABLE MODE OF TRANSPORT**

Nikola PETROVIĆ, Vesna JOVANOVIĆ,  
University of Niš, Faculty of Mechanical Engineering, Niš, Serbia  
Jelena PETROVIĆ,  
University of Niš, Faculty of Science and Mathematics, Niš, Serbia

**2.5. QUALITY OF TRANSPORT SERVICE AT SERBIAN RAILWAYS**

Ljubislav VASIN,  
The Railway College of Vocational Studies, Belgrade, Serbia  
Dušan STAMENKOVIĆ, Miroslav MIJAJLOVIĆ, Miloš MILOŠEVIĆ,  
University of Niš, Faculty of Mechanical Engineering, Niš, Serbia

**3.1. A NOVEL DESIGN OF CATENARY MAST SYSTEM**

Hirut GROSSBERGER, Frank MICHELBERGER,  
Carl Ritter von Ghega Institute for Integrated Mobility Research,  
St. Pölten, Austria  
Jan RÖHL,  
Ing. Karl & Albert KRUCH Ges.m.b.H. & Co KG, Vienna, Austria

**3.2. DETERMINING THE REACTION OF RELIANCE HYDRAULIC EXCAVATORS AT WORK AND THE MOVEMENT ON RAILWAY**

Vesna JOVANOVIĆ, Dragoslav JANOŠEVIĆ, Jovan PAVLOVIĆ,  
University of Niš, Faculty of Mechanical Engineering, Niš, Serbia

**3.3. METHODS FOR DETECTION OF OBSTACLES ON THE RAILWAY LEVEL CROSSING**

Milan PAVLOVIĆ,  
College of Applied Technical Sciences, Niš, Serbia  
Nenad T. PAVLOVIĆ, Vukašin PAVLOVIĆ,  
University of Niš, Faculty of Mechanical Engineering, Niš, Serbia

**17<sup>15</sup> – 19<sup>00</sup> Session 6 / 4*****Other Railway Aspects / Vehicle and Infrastructure Maintenance I  
(Ceremonious Room)*****Chairmen:***Prof. Dragan Petrović, Prof. Dragutin Kostić***6.1. SERBIAN NATIONAL PROVERBS AND SHORT WISDOM SAYINGS AS THE BASIS OF „SERBIA RAIL A.D“ ETHICAL CODEX**

Aleksandar BLAGOJEVIĆ,  
Srbija Voz a.d., Belgrade, Serbia

**6.2. IMPLEMENTATION OF NEW MODEL FOR REGISTRATION CUSTOMER-BASED TECHNOLOGIES INTERNET INTELLIGENT DEVICE**

Zoran PAVLOVIĆ,  
Srbija Voz a.d., Belgrade, Serbia

**6.3. ASSESSMENT EFFECTIVENESS OF TECHNICAL MEASURE ON SERBIAN RAILWAY CROSSINGS**

Sandra KASALICA, Dušan JEREMIĆ, Jovan TANASKOVIĆ, Goran TRIČKOVIĆ,  
Railway College of Vocational Studies, Belgrade, Serbia

**6.4. INFLUENCE OF BOZIC BRAKE ON DEVELOPMENT OF RAIL TRAFFIC**

Dragan PETROVIĆ, Milan BIŽIĆ,  
University of Kragujevac, Faculty of Mechanical and Civil Engineering  
in Kraljevo, Serbia

#### 6.5. MEASURES AT THE STATIONS (STOPS/POSITIONS) AS THE WAY TO IMPROVE THE SERVICE IN PASSENGER TRANSPORT BY RAIL

Dragutin JOVANOVIĆ

University for Applied Sciences - Belgrade Polytechnic, Serbia

Jasmin HODŽIĆ, Denis LUKAČ,

Faculty of Traffic, Communication and Logistics, Budva, Montenegro

#### 4.4. APPLICATION OF FMEA FOR ESTIMATION OF RISK IN FREIGHT WAGONS MAINTENANCE

Milovan SLAVKOVIĆ, Ružica SOFRANIĆ, Sreten ĐURIĆ,

GOŠA FŠV d.o.o., Smederevska Palanka, Serbia

#### 4.5. MONITORING SYSTEMS FOR ROLLING STOCK MAINTENANCE

Života ĐORĐEVIĆ,

Serbian Railways, Belgrade, Serbia

Jovan TEPIĆ, Gordan STOJIĆ

University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

#### 4.6. PROTECTING BRAKE MECHANISM OF EXCESSIVE FORCE IN LOCOMOTIVE

Erđinč RAKIPOVSKI

SAK DOOEL Skopje, Macedonia

Tasko SMILESKE, Nikola STOJKOV

Wabtec MZT, Skopje, Macedonia

#### 4.7. ELECTRICITY CONSUMPTION MONITORING IN ELECTRIC LOCOMOTIVES CLASS ŽS 441-700

Miloš CVETANOVIĆ, Bojan KOJIČIĆ, Novica JOVANOVIĆ,

R&D Center „Alfatec“ Ltd. Niš, Serbia

Sladjan ARSIĆ,

Srbija Voz a.d., Belgrade, Serbia

Dragoslav PEJČIĆ,

Srbija Kargo, Belgrade Serbia

#### 4.8. STATIC ANALYSIS BEHAVIOUR AXLE ASSEMBLY FREIGHT WAGONS

Vladimir BLANUŠA, Branko MILISAVLJEVIĆ,

The Higher Education Technical School of Professional Studies,

Novi Sad, Serbia

Milan ZELJKOVIĆ, Aleksandar ŽIVKOVIĆ,

University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia

#### 20<sup>00</sup> Dinner Party

(Restaurant *Crystal light*)

(Dimitrija Tucovića 186, Niš)

(GPS: 43°19'00.6"N+21°50'55.1"E)



FRIDAY October 14, 2016

9<sup>00</sup> – *Application of Participants*  
(Lobby)

9<sup>15</sup> – 11<sup>00</sup> *Session I*  
*Rolling Stock II*  
(Amphitheatre B)

*Chairmen:*

*Prof. Dobrinka Atmadžova, Prof. Miroslav Mijajlović*

#### 1.10. COMPUTER ANALYSIS OF A WAGON BOGIE RUNNING WITH A FLEXIBLE FRAME

Ján DIŽO, Miroslav BLATNICKÝ,

University of Žilina, Faculty of Mechanical Engineering, Slovakia

#### 1.11. A METHODOLOGY FOR DETERMINING THE CAUSES OF ROLLING STOCK DERAILMENT

Dobrinka ATMADZHOVA,

Todor Kableshkov University of Transport, Sofia, Bulgaria

#### 1.12. BAGGAGE TRANSPORT SYSTEM – PASSENGER'S REQUIREMENTS

Petra MATZENBERGER, Volker HARTL-BENZ, Bernhard RÜGER,

Vienna University of Technology, Vienna, Austria



- 1.13. RAIL VEHICLE INTERIORS - DESIGN MISTAKES TO BE AVOIDED  
Bernhard RÜGER,  
Vienna University of Technology, Vienna, Austria
- 1.14. COMPARATIVE STRENGTH ANALYSIS OF UNDERFRAMES OF FLAT WAGON VARIANTS WITH WOODEN AND STEEL FLOOR  
Svetoslav SLAVCHEV, Valeri STOILOV,  
Technical University Sofia, Bulgaria
- 1.15. DETECTION OF TORSIONAL OSCILLATIONS IN DRIVING AXLES OF ELECTRICAL VEHICLES BY APPLICATION OF SPECTRAL ANALYSIS  
Petar MARKOVIĆ, Dragutin KOSTIĆ,  
University of Belgrade, Faculty of Transport and Traffic Engineering, Belgrade, Serbia
- 1.16. ANALYSIS OF VEHICLE DIAGNOSTIC OUTPUTS GENERATED BY THE SYSTEM RV07  
Jana GALLIKOVÁ, Ľubomír KAŠIAR, Peter ZVOLENSKÝ,  
University of Žilina, Faculty of Mechanical Engineering, Žilina, Slovakia
- 1.17. DETERMINATION OF RESIDUAL STRESS IN RAIL WHEEL DURING QUENCHING PROCESS WITH FEM SIMULATION  
Miloš MILOŠEVIĆ, Aleksandar MILTENOVIĆ,  
Milan BANIĆ, Miša TOMIĆ,  
University of Niš, Faculty of Mechanical Engineering, Niš, Serbia
- 1.18. COMPARASION OF CLASSICAL BRAKE FOR FREIGHT WAGONS WITH THE NEW INTEGRATED BOGIE BRAKE IBB 10 FOR FREIGHT WAGONS  
Tasko SMILESKI,  
Wabtec MZT, Skopje, Macedonia  
Erđinč RAKIPOVSKI,  
SAK DOOEL Skopje, Macedonia  
Miodrag MILČIĆ,  
University of Niš, Faculty of Mechanical Engineering, Niš, Serbia

**9<sup>15</sup> – 11<sup>00</sup> Session 2 / 5**  
**Traffic and Transport II / Strategy and Policy I**  
(Ceremonious Room)

*Chairmen:*

*Prof. Dragomir Mandić, Prof. Branislav Bošković*

- 2.6. FUZZY DECISION SUPPORT SYSTEM FOR PLANNING ROBUST TIMETABLE  
Predrag JOVANOVIĆ, Dragomir MANDIĆ,  
University of Belgrade, Faculty of Traffic and Transport Engineering, Belgrade, Serbia  
Snežana JOSIPOVIĆ,  
–, Belgrade, Serbia
- 2.7. A FUZZY NEW MULTI-CRITERIA METHODOLOGY FOR PROVIDER SELECTION BASED ON COMPARISON OF REAL AND IDEAL PROVIDER'S PARAMETERS  
Dragan PAMUČAR, Srđan LJUBOJEVIĆ,  
University of Defense, Military Academy, Belgrade, Serbia
- 2.8. ACCIDENTAL RISK ANALYSIS FOR RAIL TRANSPORT OF DANGEROUS GOODS  
Goran TEPIĆ, Mirko ĐELOŠEVIĆ, Nenad SIMEUNOVIĆ,  
University of Novi Sad, Faculty of Technical Science, Novi Sad, Serbia  
Zoran BUNDALO,  
The Railway College of Vocational Studies, Belgrade, Serbia
- 2.9. APPLICATION OF FUZZY AHP METHOD FOR PROFIT ANALYSIS OF RAILWAY OPERATORS WITH PSO  
Slavko VESKOVIĆ, Gordan STOJIĆ,  
University of Belgrade, Faculty of Transport and Traffic Engineering, Belgrade, Serbia  
Željko STEVIĆ, Marko VASILJEVIĆ,  
University of East Sarajevo, Faculty of Transport and Traffic Engineering, Doboj, Bosnia and Herzegovina  
Snježana RAJILIĆ,  
Novi Grad Municipality, Serbia
- 2.10. TIMETABLE INTEGRATION ON THE BALKANS  
Kornél NAGY,  
Business School - MBA, Central European University, Budapest, Hungary

**5.4. COTIF INTERNATIONAL RAILWAY LAW TO CONNECT DIFFERENT NETWORKS**

Bas LEERMAKERS, Dragan NEŠIĆ,  
OTIF, Bern, Switzerland

**5.5. TRAIN PATH ALLOCATION ON CONGESTED RAILWAY INFRASTRUCTURE – IS A SERVICE PRIORITY CRITERIA LIMITING DEVELOPMENT OF COMPETITION?**

Nikola STOJADINOVIĆ, Branislav BOŠKOVIĆ,  
University of Belgrade, Faculty for Transport and Traffic Engineering,  
Belgrade, Serbia

**5.6. CHALLENGES OF CABLEWAYS REGULATION PROCESS**

Nataša CERVIĆ,  
Directorate for Railways, Belgrade, Serbia  
Branislav BOŠKOVIĆ,  
University of Belgrade - Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia  
Rešad NUHODŽIĆ,  
Ministry of Sustainable Development and Tourism of Montenegro,  
Podgorica, Montenegro

**5.7. NETWORK STATEMENT LEGISLATION AND IMPLEMENTATION**

Branka NEDELJKOVIĆ, Zorica RADOVIĆ,  
Directorate for Railways, Belgrade, Serbia

**5.8. SWOT ANALYSIS OF THE MINISTRY OF TRANSPORT AS A COMPETENT AUTHORITY FOR PSO CONTRACTS**

Slobodan ROSIĆ,  
Infrastructure of Serbian Railways, Belgrade, Serbia

**11<sup>00</sup> – 11<sup>15</sup> Poster Presentation / Coffee Break  
(Lobby)**

**P.1. THE EFFECT OF AGING TEMPERATURE ON CARBON BLACK REINFORCED TERNARY RUBBER BLEND IN RAILWAY INDUSTRY**

Slaviša JOVANOVIĆ,  
Mitas d.o.o, Ruma, Serbia  
Vojislav JOVANOVIĆ,  
University of Priština, Faculty of Natural Science and Mathematics,  
Kosovska Mitrovica, Serbia  
Gordana MARKOVIĆ,  
Tigar, Pirot, Serbia  
Milena MARINOVIC-CINCOVIĆ,  
Institute of Nuclear Science Vinča, Belgrade, Serbia  
Jaroslava BUDINSKI-SIMENDIĆ,  
University of Novi Sad, Faculty of Technology, Novi Sad, Serbia

**P.2. SURVEY AND FORECASTING THE ATTENDANCE OF RILA MONASTERY FOR THE PURPOSE OF "PROJECT ON CONSTRUCTION OF INNOVATIVE TRANSPORT INFRASTRUCTURE"**

Mirena TODOROVA,  
Todor Kableskov University of Transport, Sofia, Bulgaria

**11<sup>15</sup> – 12<sup>30</sup> Session 4 / 5  
Vehicle and Infrastructure Maintenance II / Strategy and Policy II  
(Amphitheatre B)**

*Chairmen:*

*Prof. Kiril Velkov, Prof. Aleksandar Miltenović*

**4.1. ACCUMULATION OF CONTACT FATIGUE DAMAGES IN CAR WHEELS WHEN RAILING OVER RAIL JOINTS**

Elena EVTUKH, Galina NEKLYUDOVA,  
Bryansk State Technical University, Bryansk, Russia

**4.2. CONCEPT OF PORTABLE INFORMATION SYSTEM FOR TRACING TRAIN DRIVE PROFILE**

Ranko BABIĆ,  
The Railway College of Vocational Studies, Belgrade, Serbia



- 4.3. ANALYSIS OF THE REASONS FOR EMERGENCY FAILURES IN THE BOGIES AND TRANSMISSION OF THE TRAMS IN SOFIA  
Emil M. MIHAYLOV, Dobrinka ATMADZHOVA,  
Todor Kableshkov University of Transport, Sofia, Bulgaria
- 5.1. COMPARATIVE ASSESSMENT OF EUROPEAN RAILWAYS BASED ON EU TRANSPORT SCOREBOARD DATA  
Marijana PETROVIĆ, Nataša BOJKOVIĆ, Tanja PAREZANOVIĆ,  
Snežana PEJČIĆ TARLE,  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia
- 5.2. WHERE DOES COSTS COVERAGE AND TRACK ACCESS CHARGES STRUCTURE GO AFTER ADOPTION OF REGULATION 2015/909/EU?  
Mirjana BUGARINOVIĆ, Branislav BOŠKOVIĆ,  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia
- 5.3. KEY PERFORMANCE INDICATORS FOR FUTURE SUSTAINABLE BUSINESS DEVELOPMENT OF INFRASTRUCTURE MANAGERS  
Jakša POPOVIĆ, Mirjana BUGARINOVIĆ,  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia

**11<sup>15</sup> – 12<sup>30</sup> Session 7**  
***The Graduates and the Future of Railway***  
***(Ceremonious Room)***

*Chairmen:*  
*Prof. Miloš Milošević*

- 7.1. RESEARCH OF PRODUCTIVITY INDICATORS FOR RAILWAY WAGONS IN BUSINESS TRADE CONDITIONS OF RAILWAY COMPANIES  
Student: Rade CVIJANOVIĆ,  
Mentor: Branislav BOŠKOVIĆ  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia

- 7.2. SIGNIFICANCE AND REGULATION OF SERVICES OF PUBLIC INTEREST  
Student: Uroš STANIMIROVIĆ  
Mentor: Branislav BOŠKOVIĆ  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia
- 7.3. DINAMIC OF RESTRUCTURING PROCESS OF INCUMBENTS RAILWAY COMPANIES IN EUROPE  
Student: Nikola STOJANOVIĆ  
Mentor: Branislav BOŠKOVIĆ  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia
- 7.4. CONCEPT OF INTEROPERABILITY OF THE RAILWAY SYSTEM IN EUROPE  
Student: Miroslav PROKIĆ  
Mentor: Branislav BOŠKOVIĆ  
University of Belgrade, Faculty of Transport and Traffic Engineering,  
Belgrade, Serbia
- 7.5. MODEL OF ACCESS CHARGES FOR THE USE OF RAILWAY INFRASTRUCTURE AS A MECHANISM OF SUSTAINABILITY OF RAILWAY COMPANIES ON TRANSPORT MARKET  
Student: Vladimir MALČIĆ  
Mentor: Ratko ĐURIČIĆ  
University of East Sarajevo, Faculty of Transport and Traffic Engineering, Doboj, Bosnia and Herzegovina

**12<sup>30</sup> Conference Closing**

### *Conference Fee*

The Registration Fees for the participants are:

- **12000 RSD** (10000 RSD + 20% VAT) or about **96 EUR**

The registration fee covers participation at the Conference, Conference material, welcome cocktail, coffee breaks and a Dinner party.

The Registration fee is payable by bank transfer to the account of the Conference according to the payment instructions that can be found on the web site of the Conference and in cash at the Registration Desk during the Conference.

### *Application of Participants*

For the purpose of successful organization of the International XVII Scientific-expert Conference on Railways RAILCON '16 potential participants are asked to apply their participation on time. We suggest doing that by submitting the filled *Participation Registration Form*, which can be found on the web site of the Conference, to the e-mail address of the Conference Organizer.

### *Selected papers*

Selected presented papers will be published in a thematic issue of the SCOPUS indexed International Journal of the University of Niš FACTA UNIVERSITATIS – Series: Mechanical Engineering:

<http://facta.junis.ni.ac.rs/me/me.html>

### *Organizing Secretariat*

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