

PRELIMINARY CONFERENCE PROGRAMME

CETRA 2010

First International Conference on Road and Rail Infrastructure

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NOTES TO PRESENTERS

- Authors must meet with the Chairman of their session 10 minutes before the start of the session.
- Authors must keep strictly to the time allocated for their presentation to ensure the smooth running of the programme.
- In **oral sessions**, each author is provided with **15 minutes** for oral presentation and 2 minutes for the discussion.
- In **poster sessions**, each author is provided with **5 minutes** for oral presentation. Discussion in front of the poster will take place immediately after the poster session. Poster dimensions: 70 cm width x 90 cm height.

17 – 18 May 2010

Grand Hotel Adriatic, Opatija, Croatia

Organised by:

Department of Transportation, Faculty of Civil Engineering

University of Zagreb, Croatia



Preliminary Conference Programme

Monday, 17th May 2010

08:00 - 09:00	REGISTRATION OF THE PARTICIPANTS		
09:00 - 09:20	OPENING CEREMONY		
09:20 - 09:50	1st Keynote lecture: "Recent developments in high-speed track", Prof. Coenraad Esveld, TU Delft		
09:50 - 10:20	2nd Keynote lecture: "Road construction and maintenance - two inseparable tasks", Prof. emeritus Johann Litzka, TU Wien		
10:20 - 11:00	COFFE BREAK		
11:00 - 12:30	Session 1A	Session 1B	Session 1C
	<p>063 High performance railway construction project: State Border-Botovo-Zagreb-Rijeka <i>Tihomir Lažeta, Stjepan Kralj, Tomislav Tomić, Valentina Šmit Novoselec, Slobodan Kljajić</i></p> <p>108 Modernisation of Ljubljana railway junction <i>Darja Šemrov, Joerg Fimpler, Aleš Pavšek</i></p> <p>031 Concept of development for Belgrade railway node in 21st century <i>Dragan Božović, Boško Čoko</i></p> <p>156 Integration rail connection Silesian Agglomeration with Katowice- Pyrzowice Airport <i>Sylwester Markusik</i></p> <p>131 High performace railway line from the state borderline - Botovo - Zagreb – Rijeka <i>Stjepan Kralj, Tomislav Tomić, Marko Vajdić</i></p> <p>099 Simulation of modified timetables for high speed trains Stockhlo - Göteborg <i>Hans Sipilä</i></p>	<p>107 Monitoring of river channel morphodynamical changes in the zone of bridge piers <i>Neven Kuspilić, Damir Bekić, Eamon McKeogh, Gordon Gilja</i></p> <p>030 Experimental determination of torsional stiffness in ribbed bridge decks <i>Davor Grandić, Ivana Štimac Grandić, Vildana Latić</i></p> <p>151 Static and dynamic testing of overpass on Slavonian Avenue in Zagreb <i>M. Bartolac, M. Rak, Đ. Pavlica, D. Damjanović, I. Duvnjak</i></p> <p>155 The most common causes for faster deterioration of bridges <i>Krunoslav Mavar, Sandra Škarić Palić, Jelena Bleiziffer</i></p> <p>162 Bending moment of simple bridges due to measured train load <i>Hyejin Yoon, Imjong Kwahk, Jong-Won Kwark</i></p> <p>136 Geotechnical aspects of river Sava terraces on designing of Tuzla - Orasje Highway <i>Sabid Zekan, Ibrahim Jašarević</i></p>	<p>087 The utilization of the efficiency measures for the transportation processes in the road construction and maintenance <i>Marina Petrunina, Yury Sikerzhicky</i></p> <p>054 Optimized road maintenance for road users <i>Barbara Brozek</i></p> <p>061 Management system with the secondary road construction materials <i>Dusan Stehlik, Petr Hyzl, Michal Varaus</i></p> <p>029 Consideration of sand polishing resistance in the Austrian standards–The Wehner/Schulze sand polishing test <i>Lukas Kirchmaier, Ronald Blab</i></p> <p>097 Low cost Pavement Management System (PMS) for small communities with Microsoft Excel <i>Markus Hoffmann</i></p> <p>124 Application of new technologies in vertical traffic signalization design in the City of Zagreb <i>Andelko Ščukanec, Davor Krasić, Davor Brčić</i></p>
12:30 - 14:00	LUNCH BREAK		



Preliminary Conference Programme

Monday, 17th May 2010

14:00 - 15:30	Session 2A	Session 2B	Session 2C
	<p>091 Contribution to modeling of sleeper bed <i>Ján Mandula</i></p> <p>113 RHEDA CITY slab track system solutions for tram tracks <i>Ryan Stolpmann, Wojciech Nawrat</i></p> <p>125 Application of modern slab track system on the High performance railway line "State border – Zagreb – Rijeka" – System RHEDA 2000 <i>Marko Vajdić, Wojciech Nawrat, Stjepan Kralj</i></p> <p>138 Application of modern ballastless track system on bridges of the High performance railway line "State border – Zagreb – Rijeka" <i>Nina Popovac, Nina Acalin, M. Marić, S. Dubravac</i></p> <p>146 Slab track system "ÖBB-PORR" - elastically supported track base plate <i>Angela Kuo</i></p> <p>051 The technology of tram track building <i>Dejana Šipoš, Krešimir Vrselja, Drago Tadić</i></p>	<p style="text-align: center;">POSTER SESSION 2B</p> <p style="text-align: center;">Detailed description on page 9/10</p>	<p>090 Experimental estimation of ecological capacity of road from the point of view of noise <i>Brigita Salaiová, Mária Kovaľaková, Júlia Hlaváčová</i></p> <p>008 Unreliability of input parameters during the railroad noise barriers design <i>Zlatko Franolić, Maro Puljizević, Alan Štimac, Dinko Stipaničev</i></p> <p>009 Protection from noise and vibrations on Croatian Railways network <i>Sanjin Novosel, Stjepan Lakušić, Hrvoje Domitrović</i></p> <p>015 The applicability of 3D model in calculation of road traffic noise level <i>Vesna Dragčević, Stjepan Lakušić, Saša Ahac</i></p> <p>042 Traffic noise control using sound barriers <i>Ivan Bolkovac, Marko Horvat, Hrvoje Domitrović</i></p> <p>068 Road Weather Information Systems (RWIS) of Slovenia <i>Matjaž Ivačić, Andrej Beden, Alenka Šajn Slak, Rok Kršmanec, Samo Čarman, Marko Korošec</i></p>
15:30 - 16:00	COFFE BREAK		



Preliminary Conference Programme

Monday, 17th May 2010

16:00 - 17:30	Session 3A	Session 3B	Session 3C
	<p>012 Scanning and thermographic surveying for needs of elaboration of railway tunnels rehabilitation project <i>Stipe Šošo, Staško Humar</i></p> <p>040 Settlement assessment of classical railway track under vertical loading and it's link with maintenance works <i>Zoran Krakutovski, Darko Moslavac, Zlatko Zafirovski</i></p> <p>047 Software innovation for advanced approach toward modern railway maintenance projects <i>Leon Leban, Žiga Ramšak</i></p> <p>119 Modern condition-based railway infrastructure asset management <i>Stasha Jovanovic, Arjen Zoeteman</i></p> <p>154 ARGOS® - Intelligent local measurement stations for continuous collection of vehicle condition <i>Johannes Stephanides, Wolfgang Zottl, Dietmar Maicz</i></p> <p>020 Rail car identification as a key issue of operational handling <i>Schöbel Andreas, Maly Thomas</i></p>	<p>153 Design and practice of reinforced earth walls along the highway in the Croatian karst region <i>Predrag Kvasnička, Dubravko Domitrović, Biljana Kovačević Zelić</i></p> <p>100 Site characterization in road and rail transportation projects <i>Meho Saša Kovačević, Mladen Cvetković, Danijela Jurić-Kačunić</i></p> <p>130 Rational improvement of landslide in clay <i>Ibrahim Jašarević, Mario Njegovec, H. Perković, H. Krhen</i></p> <p>145 Use of soil nailed stabilized walls and slopes in transportation projects <i>Jerko Kocijan, Predrag Kvasnička, Mladen Vucetić</i></p> <p>147 Integrating methods for subsurface characterization in support of linear infrastructure projects <i>Jerko Kocijan, Dima Amine, David Lutz, Christopher Hitchcock</i></p> <p>168 State of the art slope and rock face protection systems to secure railway lines <i>Aron Vogel, Armin Roduner, Budimir Vjekoslav, Lukas Rohrer</i></p>	<p>058 Road network of Dubrovnik region in future <i>Damir Pološki, Ana Nikolić, Igor Majstorović</i></p> <p>062 Traffic models used for the purposes execution of socio-economic analysis of Zagreb-Sisak motorway <i>Zvonimir Pejić, Krunoslav Perić, Slobodan Kljajić</i></p> <p>115 Passenger public transportation strategy in Zagreb County region – present reality and perspectives <i>Davor Brčić, Branko Mikinac</i></p> <p>098 Defining the vehicle movement parameters on signalized intersections approaches <i>Vuk Bogdanović, Zoran Papić, Nenad Ruškić, Milja Leković, Aleksandar Jeftić</i></p> <p>140 Research results on the effectiveness of wind protection structures on motorways <i>Goran Gjetvaj, Petar Sesar, Mirjana Mašala-Buhin</i></p> <p>043 Application of simulations and visualizations in road traffic <i>Zdenko Lanović, Željka Žagar, Silvio Žagar, T. Salopek</i></p>
END of DAY 1			

20:00 - 23:00	<h2>CONFERENCE GALA DINNER</h2> <p>17th May 2010</p>
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Preliminary Conference Programme

Tuesday, 18th May 2010

09:00 - 10:30	Session 4A	Session 4B	Session 4C
	<p>075 Application of the Polish active GNSS geodetic network for surveying and design of the railroad <i>Wladyslaw Koc, Cezary Specht</i></p> <p>082 Review of state of railway infrastructure in Bosnia and Herzegovina - Possibilities for increasing speed and effects of introduction of trains with tilting technology <i>Sanjin Albinović</i></p> <p>106 Economic evaluation and selection of route for new railway Zagreb-Rijeka <i>Dušan Marušić, Nenad Mladineo, Tatjana Stazić</i></p> <p>133 Outline of the spatial-traffic study of the road and railway traffic system in the wider Zagreb city area <i>Stjepan Kralj, Miljenko Stanković, Zvonimir Pejić, Mirjana Mašala-Buhin</i></p> <p>116 Modification of electric traction system in Croatian Railways network <i>Zlatko Dokaza</i></p> <p>166 Intermodal infrastructural network - base for intermodal transport development and creation of new added value <i>Draгутin Šubat, Zrinka Vranar</i></p>	<p>102 Comparison of stiffness moduli using 2-point and 4-point bending tests <i>Michal Varaus, Petr Hyzl, Vaclav Soucek, Otakar Vacin</i></p> <p>013 Application of recycled aggregate in bearing courses of pavement structures <i>Andreas Stanić, Sanja Dimter</i></p> <p>032 Establishing of wearing course asphalt mixture stiffness <i>Carmen Racanel, Adrian Burlacu, Claudia Surlea</i></p> <p>036 In situ evaluation of rubblized PCCP modulus by surface waves <i>Nenad Gucunski, Ali Maher</i></p> <p>019 Comparison of pavement layers thickness measured by Ground Penetrating Radar and conventional methods <i>Tatjana Rukavina, Marko Ožbolt, Josipa Domitrović</i></p> <p>039 Properties of steel slag aggregate and steel slag asphalt concrete <i>Mladen Fistrić, Andrea Strineka, Ružica Rosković, Irina Stipanović-Oslaković</i></p>	<p>044 Digital terrain model application in road planning and design <i>Sergije Babić, Kristijan Ljutić</i></p> <p>046 Possible reconstruction of intersections in urban areas using roundabouts <i>Aleksandra Deluka-Tibljaš, Sergije Babić, Marijana Cuculić, Sanja Šurdonja</i></p> <p>056 Finding solutions for overburdened roundabouts <i>Damir Pološki, Igor Majstorović, Mario Njegovec</i></p> <p>109 The Road Safety Audit and its influence on road design process: Implementation of EU Directive 96/2008 <i>Lutz Stefan Pfeiffer, Krsto Lipovac, Dejan Jovanov</i></p> <p>114 Contingency plans in urban mobility systems <i>Ana Relva Pereira, M. Rosário M. R. Macário, Camila Henrique Garcia</i></p> <p>118 Road designing in 3D (with PC software) <i>Žarko Pintar, Nataša Špelić</i></p>
10:30 - 11:00	COFFE BREAK		



Preliminary Conference Programme

Tuesday, 18th May 2010

11:00 - 12:30	Session 5A	Session 5B	Session 5C
	<p>071 Lean management methods prevent defaults on production and recalls of vehicles on road <i>Rafael S. Wollny, Roland Kaefer</i></p> <p>120 Cars survival in a national car fleet: non-parametric and parametric approaches applied to French data <i>Zéhir Kollı, Ariane Dupont, Laurent Hivert</i></p> <p>076 Ways to reduce fuel consumption and emissions of diesel multiple units with hydraulic power transmission - Part 1 <i>Günter Löffler, Martin Kache, Uwe Steglich</i></p> <p>076 Ways to reduce fuel consumption and emissions of diesel multiple units with hydraulic power transmission - Part 2 <i>Günter Löffler, Martin Kache, Uwe Steglich</i></p> <p>128 Analysis of wagon impact <i>Dragan Petrović, Arandel Babić, Milan Bižić, Marina Pljakić</i></p> <p>164 Device and technology of wagon bogie Y25Lsd testing <i>N. G. Nenov, E. N. Dimitrov, T. G. Ruzhekov</i></p>	<p>052 The innovation of CBR test for the design of low capacity road pavements constructions <i>Jaroslav Hauser, Lenka Ševelová, Alice Kozumplíková</i></p> <p>018 Comparison of base courses of cement stabilized pavement structures <i>Slaviša Rajič, Tomislav Šolić</i></p> <p>026 Resistance of asphalt binder and surface courses to high and low temperatures <i>Aleksander Ljubic, Roman Baselj</i></p> <p>059 Experience with the transition to the functional testing of asphalt mixtures <i>Petr Hyzl, Michal Varaus, Dusan Stehlik</i></p> <p>083 Some findings concerning the determination of granular base moduli for flexible pavement thickness design <i>Moshe Livneh</i></p>	<p>027 The functional structure of the national automatic toll collection system <i>Gabriel Nowacki, Malgorzata Walendzik</i></p> <p>069 Application of the microscopic models as a part of the decision support system at all the stages of transportation system evaluation <i>Elena Yurshevich</i></p> <p>081 Simulation as a tool of decision support process: case study of Latvia <i>Irina Yatskiv, Mihails Savrasovs, Elena Yurshevich, Alexander Medvedev</i></p> <p>086 Constructing the urban public transport system performance indicator <i>Irina Pticina, Irina Yatskiv</i></p> <p>141 Towards new principles of road categorization - reflections based on practices in Belgium and Eastern Europe <i>Dirk Lauwers, Dominique Gillis</i></p>
12:30 - 14:00	LUNCH BREAK		



Preliminary Conference Programme

Tuesday, 18th May 2010

14:00 - 15:30	Session 6A	Session 6B	Session 6C
	<p>055 Asphalt pavements of tram tracks – Catalogue of defects and failures <i>Otto Plášek, Dušan Stehlik, Josef Buchta, Richard Svoboda, Miroslava Hruziková</i></p> <p>005 The behavior of railways track structure in the case of thin ballast <i>Stjepan Lakusić, Tino Medvidović, Ivica Kožar</i></p> <p>007 Effect of ballast pockets on decrease in bearing capacity and stability of geotechnical railway structures <i>Pero Šiša, Željko Sokolić</i></p> <p>074 The experimental investigations and modelling of track work with the use of tamping machine's diagnostic informations <i>Wladyslaw Koc, Andrzej Wilk, Piotr Chrostowski, Slawomir Grulkowski</i></p> <p>159 Developing deterioration probabilistic model on the basis of Weibull distribution for rail wear with case study in Lorestan railway <i>Jabbar Ali Zakeri, Shahrbanoo Shahriari, Hossein Asgari</i></p> <p>161 Field and laboratory investigation on the lateral resistance of sleepers by employing STPT test <i>Jabbar Ali Zakeri, Behrouz Mir Fattahi, Maryam Fakhari</i></p>	<p>POSTER SESSION 6B</p> <p>detailed description on page 10/10</p>	<p>006 State of the art report on train and traffic control on commuter lines <i>Andreas Schöbel, Hrvoje Haramina</i></p> <p>035 Perception of the travel time reliability of the urban railway service in Tokyo <i>Kazuyuki Takada, Makoto Fujii, Shigeki Yokoyama</i></p> <p>079 Forecasting models of accidents risk at railway <i>Boriss Misnevs, Alla Melikyan</i></p> <p>092 Study of the performance and utilization of the Swedish railway network <i>Anders Lindfeldt</i></p> <p>139 An integrated time table for railways - a beneficial solution for Central-Eastern-European-countries <i>Peter Veit, Tomislav Josip Mlinaric</i></p> <p>089 Innovative systems and methods for a deep understanding of railway assets <i>Pietro Pace, Franco Carpanese</i></p>
15:30 - 16:00	COFFE BREAK		



Preliminary Conference Programme

Tuesday, 18th May 2010

16:00 - 17:30	Session 7A	Session 7B	Session 7C
	<p>014 Program of solving level crossings in the Republic of Croatia <i>Marko Hoić</i></p> <p>037 Planning and constructing motorways and railroads crossing classical karst in Slovenia <i>Martin Knez, Tadej Slabe</i></p> <p>050 Experiences acquired in the course of designing and execution of works on reconstruction of level crossings within the on Serbian railway line network <i>Tatjana Simić, Ivan Ristić, Tatjana Mikić</i></p> <p>132 Some solutions for the Zagreb road and railway traffic junction <i>Stjepan Kralj, Miljenko Stanković</i></p> <p>135 The guide for traffic signals design at intersections near railroad crossings <i>Mirsad Kulovic</i></p> <p>077 Utilization of railway capacities for solving traffic problems in city areas <i>Sanjin Albinović, Džebo Suada</i></p>	<p>010 Evenness of the motorway driving surface <i>Miroslav Šimun, Tatjana Rukavina</i></p> <p>022 Upgrading of the Učka Tunnel <i>Gordana Tomašević</i></p> <p>023 Evaluation of traffic safety at the construction and maintenance of road projects <i>Bashir M. Aburawi</i></p> <p>028 Main designs of bridge repairs on main road M-8 (Section: Aljinovici - Sjenica - Novi Pazar) <i>Slavica Vučetić - Abinun, Petar Spasić</i></p> <p>134 Asset management of national road network in Croatia <i>Miroslav Keller, Hrvoje Rukavina</i></p> <p>021 Speed reduction in road traffic by installation of speed tables <i>Ivo Brozović</i></p>	<p>003 Influence of planum bearing capacity on track structure behaviour <i>Slavko Živković, Stjepan Lakušić</i></p> <p>041 Reducing vibration in Lisbon's train system <i>Patrick Carels, Koen Ophalffens, Paulo Pinto, Roger Kelly, Zoltan Horvath</i></p> <p>085 Analysis of the dynamic affects on switches using vibration measurement <i>Jaroslav Smutný, Ivan Vukušić</i></p> <p>160 Investigation of dynamic behavior of railway track in transition zone <i>Jabbar Ali Zakeri, Vida Ghorbani</i></p> <p>163 Influence of wheel and rail profiles on railway vehicle dynamics <i>Atmadzhova Dobrinka</i></p> <p>152 Inspection of railway bridge over the river Slobošтина next to Okučani <i>Ivan Duvnjak, Mladenko Rak, Ljudevit Herceg, Vladimir Frančić, Branko Margetić</i></p>
END of DAY 2			

Wednesday, 19th May 2010

CONFERENCE SOCIAL TOUR 3 (ISTRIA: Hum - Motovun - Rovinj - Pula)

<http://www.grad.hr/cetra/en/tours.html>

Preliminary Conference Programme

POSTER SESSION 2B (Education and Environmental), Monday, 17th May 2010, 14:00 - 15:30

Poster No.	Posters 1 to 5	Poster No.	Posters 6 to 10	Poster No.	Posters 11 to 14
1	149 The Bologna process - first experiences <i>Željko Korlaet</i>	6	142 Strategic environmental assessment for modernization of X Paneuropean railway corridor <i>Mario Pokrivač, Marta Brkić, Tajana Uzelac</i>	11	157 “Metro” Zagreb project <i>Davorin Kolić, Davor Kراسić</i>
2	045 Transportation engineering field at the university studies of the Faculty of Civil Engineering University of Rijeka <i>Aleksandra Deluka-Tibljaš, Sergije Babić</i>	7	129 Issues related to elaboration of environmental impact assessment studies for construction of state roads <i>Zoran Poljanec, Mario Pokrivač</i>	12	121 The monitoring of road traffic noise along the motorways A1, A3 and A4 under management of Croatian Motorways Ltd. <i>D. Stipaničev, D. Bakliža, A. Štimac, J. Barić, M. Šprajc</i>
3	111 Interdisciplinary approach to education of students in field of road construction <i>Sanja Dimter, Zlata Dolaček-Alduk, Ivana Barišić</i>	8	073 The role of regional planning documents in sustainable traffic noise protection design <i>Igor Grginić, Ena Bićanić, Mario Jukić</i>	13	122 Importance of the proper implementation of the noise prediction methods in the noise abatement projects of the traffic infrastructure <i>Alan Štimac, Simon Shilton, Dinko Stipaničev</i>
4	001 Influence of different pavement surface on noise levels in passenger car <i>Stjepan Lakušić, Ivica Stančerić, Maja Ahac</i>	9	165 Relation between road traffic and environment <i>Ivo Jakovljević, Marinko Jakovljević</i>	14	123 An integrated approach of the quality assurance during strategic noise mapping process of the traffic infrastructure <i>Alan Štimac, Simon Shilton, Dinko Stipaničev</i>
5	002 Noise protection of Zagreb ZOO from road and rail transport <i>S. Lakušić, M. Ahac, S. Ahac, I. Stančerić, I. Haladin</i>	10	004 Tramway and electrical power supply without overhead wires <i>Stjepan Lakušić, Tatjana Stazić, Damir Škrinjar</i>	15	

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Preliminary Conference Programme

POSTER SESSION 6B (Roads and Underground constructions), Tuesday, 18th May 2010, 14:00 - 15:30

Poster No.	Posters 1 to 5	Poster No.	Posters 6 to 10	Poster No.	Posters 11 to 15
1	011 Conceptual traffic-technological and construction solution of delevelling of an intersection on Slavenska Avenue in Zagreb <i>Dinko Brdarić, Zdenko Lanović, Kazimir Rehlicki</i>	6	084 Application of steel culverts in section of Osijek-Đakovo motorway <i>Ivana Barišić, Mario Bogdan, Vesna Dragčević</i>	11	148 Influence of road infrastructure on functioning of postal traffic in the Republic of Croatia <i>Pero Škorput, Marijan Binički, Davorin Vukadin</i>
2	064 Traffic modelling for the financial/market analysis of the Kržišće - Žuta Lokva motorway <i>Zvonimir Pejić, Zdravko Duplančić, Aleksandar Lončarić</i>	7	150 Monitoring and load testing of the Cetina bridge <i>Domagoj Damjanović, Mladenko Rak, Joško Krolo</i>	12	158 Underground railway pass through Zagreb City <i>Davorin Kolić, Maja Ahac, Ivo Haladin</i>
3	057 Problem area of route definition for high speed road corridors <i>Željko Stepan, Ana Nikolić, Mario Njegovec</i>	8	072 The applied concept of long railway tunnels on high performance railway line "State Border-Zagreb-Rijeka" <i>Darko Šarić, Tanja Mikulić, Marko Vajdić</i>	13	066 Traffic analysis of Slavenska Avenue in Zagreb <i>Zvonimir Pejić, Dominik Stamać, Stjepan Kralj</i>
4	017 The effect of traffic load on flexible pavements performance – Croatian case studies <i>Tatjana Rukavina, Josipa Domitrović, Marko Ožbolt</i>	9	117 Designing, construction and supervision of works on reconstruction of small span bridges on Croatian Railway lines <i>Ivan Jakovljević, Velimir Šporčić</i>	14	101 Long-term deformations in road tunnels due to corrosion of steel anchors <i>Ivan Arapov, Radovan Simović, Meho Saša Kovačević</i>
5	053 Silica fume as additive to the concrete used for concrete pavements <i>Danilo Popović</i>	10	127 Modelling of milling tools in the procession of road and railway infrastructure facilities <i>Nemanja Ilić, Aleksandra Petrović, Arandjel Babić, Marina Pljakić</i>	15	167 150 years of the railways in Croatia - Overview of the construction and development of railway systems <i>Helena Bunijevac</i>

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