

CETRA 2010

First International Conference on Road and Rail Infrastructure www.grad.hr/cetra

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



	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 hig	h-speed track", Prof. Coenraad Esveld, TU Delft								
09:50 - 10:20	2nd Keynote lecture: "Road construction and mai	ntenance - two inseparable tasks", Prof. emmeritus	Johann Litzka , TU Wien							
10:20 - 11:00		COFFE BREAK								
11:00 - 12:30	Session 1A	Session 1B	Session 1C							
	 High performance railway construction project: State Border-Botovo-Zagreb-Rijeka Tihomir Lažeta, Stjepan Kralj, Tomislav Tomić, Valentina Šmit Novoselec, Slobodan Kljajić Modernisation of Ljubljana railway junction Darja Šemrov, Joerg Fimpler, Aleš Pavšek 	 Monitoring of river channel morphodynamical changes in the zone of bridge piers Neven Kuspilić, Damir Bekić, Eamon McKeogh, Gordon Gilja Experimental determination of torsional stiffness in ribbed bridge decks Davor Grandić, Ivana Štimac Grandić, Vildana Latić 	087 The utilization of the efficiency measures for the transportation processes in the road construction and maintenance Marina Petrunina, Yury Sikerzhicky 054 Optimized road maintenance for road users Barbara Brozek							
	031 Concept of development for Belgrade railway node in 21st century Dragan Božović, Boško Čoko	151 Static and dynamic testing of overpass on Slavonian Avenue in Zagreb M. Bartolac, M. Rak, D. Pavlica, D. Damjanović, I. Duvnjak	061 Management system with the secondary road construction materials Dusan Stehlik, Petr Hyzl, Michal Varaus							
	156 Integration rail connection Silesian Aglomeration with Katowice- Pyrzowice Airport Sylwester Markusik	6 Integration rail connection Silesian Aglomeration with Katowice- Pyrzowice Airport 155 The most common causes for faster deterioration of bridges 029 Consideration of Austrian standa								
	131 High performace railway line from the state borderline - Botovo - Zagreb - Rijeka Stjepan Kralj, Tomislav Tomić, Marko Vajdić	162 Bending moment of simple bridges due to measured train load Hyejin Yoon, Imjong Kwahk, Jong-Won Kwark	097 Low cost Pavement Management System (PMS) for small communities with Microsoft Excel Markus Hoffmann							
	099 Simulation of modified timetables for high speed trains Stockhlom - Göteborg Hans Sipilä	136 Geotehnical aspects of river Sava terraces on designing of Tuzla - Orasje Highway Sabid Zekan, Ibrahim Jašarević	124 Application of new technologies in vertical traffic signalization design in the City of Zagreb Anđelko Ščukanec, Davor Krasić, Davor Brčić							
12:30 - 14:00		LUNCH BREAK								



	Monday, 17th May 2010									
14:00 - 15:30	0 Session 2A		Session 2B		Session 2C					
	091	Contribution to modeling of sleeper bed Ján Mandula	POSTER SESSION 2B	090	Experimental estimation of ecological capacity of road from the point of view of noise Brigita Salaiová, Mária Kovaľaková, Júlia Hlaváčová					
	113	RHEDA CITY slab track system solutions for tram tracks Ryan Stolpmann, Wojciech Nawrat	Detailed description on page 9/10	008	Unreliability of input parameters during the railroad noise barriers design Zlatko Franolić, Maro Puljizević, Alan Štimac, Dinko Stipaničev					
	125	Application of modern slab track system on the High performance railway line "State border – Zagreb – Rijeka" – System RHEDA 2000 Marko Vajdić, Wojciech Nawrat, Stjepan Kralj		009	Protection from noise and vibrations on Croatian Railways network Sanjin Novosel, Stjepan Lakušić, Hrvoje Domitrović					
	138	Application of modern ballastless track system on bridges of the High performance railway line "State border – Zagreb – Rijeka" Nina Popovac, Nina Acalin, M. Marić, S. Dubravac		015	The applicability of 3D model in calculation of road traffic noise level Vesna Dragčević, Stjepan Lakušić, Saša Ahac					
	146	Slab track system "ÖBB-PORR" - elastically supported track base plate Angela Kuo		042	Traffic noise control using sound barriers Ivan Bolkovac, Marko Horvat, Hrvoje Domitrović					
	051	The technology of tram track building Dejana Šipoš, Krešimir Vrselja, Drago Tadić		068	Road Weather Information Systems (RWIS) of Slovenia Matjaž Ivačič, Andrej Beden, Alenka Šajn Slak, Rok Kršmanc, Samo Čarman, Marko Korošec					
15:30 - 16:00			COFFE BREAK							



	Monday, 17th May 2010								
16:00 - 17:30	Session 3A			Session 3B	Session 3C				
	012	Scanning and thermographic surveying for needs of elaboration of railway tunnels rehabilitation project Stipe Šošo, Staško Humar	153	Design and practice of reinforced earth walls along the highway in the Croatian karst region Predrag Kvasnička, Dubravko Domitrović, Biljana Kovačević Zelić	058	Road network of Dubrovnik region in future Damir Pološki, Ana Nikolić, Igor Majstorović			
	040	Settlement assessment of classical railway track under vertical loading and it's link with maintenance works Zoran Krakutovski, Darko Moslavac, Zlatko Zafirovski	100	Site characterization in road and rail transportation projects Meho Saša Kovačević, Mladen Cvetković, Danijela Jurić-Kaćunić	062	Traffic models used for the purposes execution of socio- economic analysis of Zagreb-Sisak motorway Zvonimir Pejić, Krunoslav Perić, Slobodan Kljajić			
	047	Software innovation for advanced approach toward modern railway maintenance projects Leon Leban, Žiga Ramšak	130	Rational improvement of landslide in clay Ibrahim Jašarević, Mario Njegovec, H. Perković, H. Krhen	115	Passenger public transportation strategy in Zagreb County region – present reality and perspectives Davor Brčić, Branko Mikinac			
	119	Modern condition-based railway infrastructure asset management Stasha Jovanovic, Arjen Zoeteman	145	Use of soil nailed stabilized walls and slopes in transportation projects Jerko Kocijan, Predrag Kvasnička, Mladen Vucetić	098	Defining the vehicle movement parameters on signalized intersections approaches Vuk Bogdanović, Zoran Papić, Nenad Ruškić, Milja Leković, Aleksandar Jeftic			
	154	ARGOS® - Intelligent local measurement stations for continuous collection of vehicle condition Johannes Stephanides, Wolfgang Zottl, Dietmar Maicz	147	Integrating methods for subsurface characterization in support of linear infrastructure projects Jerko Kocijan, Dima Amine, David Lutz, Christopher Hitchcock	140	Research results on the effectiveness of wind protection structures on motorways Goran Gjetvaj, Petar Sesar, Mirjana Mašala-Buhin			
	020	Rail car identification as a key issue of operational handling Schöbel Andreas, Maly Thomas	168	State of the art slope and rock face protection systems to secure railway lines Aron Vogel, Armin Roduner, Budimir Vjekoslav, Lukas Rohrer	043	Application of simulations and visualizations in road traffic Zdenko Lanović, Željkica Žagar, Silvio Žagar, T. Salopek			
_				END of DAY 1					

CONFERENCE GALA DINNER

17th May 2010

20:00 - 23:00



	Tuesday, 18th May 2010								
09:00 - 10:30	Session 4A	Session 4B	Session 4C						
	075 Application of the Polish active GNSS geodetic network for surveing and design of the railroad Wladyslaw Koc, Cezary Specht	102 Comparison of stiffness moduli using 2-point and 4-point bending tests Michal Varaus, Petr Hyzl, Vaclav Soucek, Otakar Vacin	044 Digital terrain model application in road planning and design Sergije Babić, Kristijan Ljutić						
	082 Review of state of railway infrastructure in Bosnia and Herzegovina - Possibilities for increasing speed and effects of introduction of trains with tilting technology Sanjin Albinović	013 Application of recycled aggregate in bearing courses of pavement structures Andreas Stanić, Sanja Dimter	O46 Possible reconstruction of intersections in urban areas using roundabouts Aleksandra Deluka-Tibljaš, Sergije Babić, Marijana Cuculić, Sanja Šurdonja						
	106 Economic evaluation and selection of route for new railway Zagreb-Rijeka Dušan Marušić, Nenad Mladineo, Tatjana Stazić	032 Establishing of wearing course asphalt mixture stiffness Carmen Racanel, Adrian Burlacu, Claudia Surlea	056 Finding solutions for overburdened roundabouts Damir Pološki, Igor Majstorović, Mario Njegovec						
	133 Outline of the spatial-traffic study of the road and railway traffic system in the wider Zagreb city area Stjepan Kralj, Miljenko Stanković, Zvonimir Pejić, Mirjana Mašala-Buhin	036 In situ evaluation of rubblized PCCP modulus by surface waves Nenad Gucunski, Ali Maher	109 The Road Safety Audit and its influence on road design process: Implementation of EU Directive 96/2008 Lutz Stefan Pfeiffer, Krsto Lipovac, Dejan Jovanov						
	116 Modification of electric traction system in Croatian Railways network Zlatko Dokaza	019 Comparison of pavement layers thickness measured by Ground Penetrating Radar and conventional methods Tatjana Rukavina, Marko Ožbolt, Josipa Domitrović	114 Contingency plans in urban mobility systems Ana Relva Pereira, M. Rosário M. R. Macário, Camila Henrique Garcia						
	166 Intermodal infrastructural network - base for intermodal transport development and creation of new added value Dragutin Šubat, Zrinka Vranar	039 Properties of steel slag aggregate and steel slag asphalt concrete Mladen Fistrić, Andrea Strineka, Ružica Rosković, Irina Stipanović-Oslaković	118 Road designing in 3D (with PC software) Žarko Pintar, Nataša Špelić						
10:30 - 11:00		COFFE BREAK							



			Ţ	uesday, 18th May 2010				
11:00 - 12:30	Session 5A			Session 5B	Session 5C			
	071	Lean management methods prevent defaults on production and recalls of vehicles on road Rafael S. Wollny, Roland Kaefer	052	The innovation of CBR test for the design of low capacity road pavements constructions Jaroslav Hauser, Lenka Ševelová, Alice Kozumplíková	027	The functional structure of the national automatic toll collection system Gabriel Nowacki, Malgorzata Walendzik		
	120	Cars survival in a national car fleet: non-parametric and parametric approaches applied to French data Zéhir Kolli, Ariane Dupont, Laurent Hivert	018	Comparison of base courses of cement stabilized pavement structures Slaviša Rajič, Tomislav Šolić	069	Application of the microscopic models as a part of the decision support system at all the stages of transportation system evaluation Elena Yurshevich		
	076	Ways to reduce fuel consumption and emissions of diesel multiple units with hydraulic power transmission - Part 1 Günter Löffler, Martin Kache, Uwe Steglich	026	Resistance of asphalt binder and surface courses to high and low temperatures Aleksander Ljubic, Roman Baselj	081	Simulation as a tool of decision support process: case study of Latvia Irina Yatskiv, Mihails Savrasovs, Elena Yurshevich, Alexander Medvedev		
	076	Ways to reduce fuel consumption and emissions of diesel multiple units with hydraulic power transmission - Part 2 Günter Löffler, Martin Kache, Uwe Steglich	059	Experience with the transition to the functional testing of asphalt mixtures Petr Hyzl, Michal Varaus, Dusan Stehlik	086	Constructing the urban public transport system performance indicator Irina Pticina, Irina Yatskiv		
	128	Analysis of wagon impact Dragan Petrović, Aranđel Babić, Milan Bižic, Marina Pljakić	083	Some findings concerning the determination of granular base moduli for flexible pavement thickness design Moshe Livneh	141	Towards new principles of road categorization - reflections based on practices in Belgium and Eastern Europe Dirk Lauwers, Dominique Gillis		
	164	Device and technology of wagon bogie Y25Lsd testing N. G. Nenov, E. N. Dimitrov, T. G. Ruzhekov						
12:30 - 14:00		LUNCH BREAK						



	Tuesday, 18th May 2010									
14:00 - 15:30	0 Session 6A		Session 6B		Session 6C					
	055	Asphalt pavements of tram tracks – Catalogue of defects and failures Otto Plášek, Dušan Stehlík, Josef Buchta, Richard Svoboda, Miroslava Hruzíková	POSTER SESSION 6B	006	State of the art report on train and traffic control on commuter lines Andreas Schöbel, Hrvoje Haramina					
	005	The behavior of railways track structure in the case of thin ballast Stjepan Lakusić, Tino Medvidović, Ivica Kožar	detailed description on page 10/10	035	Perception of the travel time reliability of the urban railway service in Tokyo Kazuyuki Takada, Makoto Fujiu, Shigeki Yokoyama					
	007	Effect of ballast pockets on decrease in bearing capacity and stability of geotechnical railway structures Pero Šiša, Željko Sokolić		079	Forecasting models of accidents risk at railway Boriss Misnevs, Alla Melikyan					
	074	The experimental investigations and modelling of track work with the use of tamping machine's diagnostic informations Wladyslaw Koc, Andrzej Wilk, Piotr Chrostowski, Slawomir Grulkowski		092	Study of the performance and utilization of the Swedish railway network Anders Lindfeldt					
	159	Developing deterioration probabilistic model on the basis of Weibull distribution for rail wear with case study in Lorestan railway Jabbar Ali Zakeri, Shahrbanoo Shahriari, Hossein Asgari		139	An integrated time table for railways - a beneficial solution for Central-Eastern-European-countries Peter Veit, Tomislav Josip Mlinaric					
	161	Field and laboratory investigation on the lateral resistance of sleepers by employing STPT test Jabbar Ali Zakeri, Behrouz Mir Fattahi, Maryam Fakhari		089	Innovative systems and methods for a deep understanding of railway assets Pietro Pace, Franco Carpanese					
15:30 - 16:00			COFFE BREAK							

	Tuesday, 18th May 2010							
16:00 - 17:30		Session 7A		Session 7B	Session 7C			
	014	Program of solving level crossings in the Republic of Croatia Marko Hoić	010	Evenness of the motorway driving surface Miroslav Šimun, Tatjana Rukavina	003	Influence of planum bearing capacity on track structure behaviour Slavko Živković, Stjepan Lakušić		
	037	Planning and constructing motorways and railroads crossing classical karst in Slovenia Martin Knez, Tadej Slabe	022	Upgrading of the Učka Tunnel Gordana Tomašević	041	Reducing vibration in Lisbon's train system Patrick Carels, Koen Ophalffens, Paulo Pinto, Roger Kelly, Zoltan Horvath		
	050	Experiences acquired in the course of designing and execution of works on reconstruction of level crossings within the on Serbian railway line network Tatjana Simić, Ivan Ristić, Tatjana Mikić	023	Evaluation of traffic safety at the construction and maintenance of road projects Bashir M. Aburawi	085	Analysis of the dynamic affects on switches using vibration measurement Jaroslav Smutný, Ivan Vukušič		
	132	Some solutions for the Zagreb road and railway traffic junction Stjepan Kralj, Miljenko Stanković	028	Main designs of bridge repairs on main road M-8 (Section: Aljinovici - Sjenica - Novi Pazar) Slavica Vučetić - Abinun, Petar Spasić	160	Investigation of dynamic behavior of railway track in transition zone Jabbar Ali Zakeri, Vida Ghorbani		
	135	The guide for traffic signals design at intersections near railroad crossings Mirsad Kulovic	134	Asset management of national road network in Croatia Miroslav Keller, Hrvoje Rukavina	163	Influence of wheel and rail profiles on railway vehicle dynamics Atmadzhova Dobrinka		
	077	Utilization of railway capacities for solving traffic problems in city areas Sanjin Albinović, Džebo Suada	021	Speed reduction in road traffic by installation of speed tables Ivo Brozović	152	Inspection of railway bridge over the river Sloboština next to Okučani Ivan Duvnjak, Mladenko Rak, Ljudevit Herceg, Vladimir Frančić, Branko Margetić		
				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



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

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

Poster instructions and suggestions:

- 1. All posters at the conference are to be presented in the form of commented posters. Each commented poster presentation consists of a **5-minute** talk in a session and discussion in front of your poster after the session. There will be no time for discussion immediately after each presentation, thus the authors are requested to answer on possible questions after the poster session.
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- 3. Posters are limited to 70 cm width x 90 cm height.
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POSTER SESSION 6B (Roads and Underground constructions), Tuesday, 18th May 2010, 14:00 - 15:30

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

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