

CETRA²⁰¹²

Final Programme

2nd International Conference
on Road and Rail Infrastructure
7–9 May 2012
Dubrovnik, Croatia

www.grad.unizg.hr/cetra



Organizer
University of Zagreb
Faculty of Civil Engineering
Department of Transportation



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Prof. Stjepan Lakušić, University of Zagreb, Faculty of Civil Engineering

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All members of CETRA 2012 Conference Organizing Committee are professors and assistants of the Department of Transportation, Faculty of Civil Engineering at University of Zagreb.

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WELCOME TO CETRA 2012 AND WELCOME TO DUBROVNIK

The intention of CETRA 2012 conference is to bring together scientists and experts in the fields of road and railway engineering and give them one more opportunity to present the results of their researches, findings and innovations. Road and railway infrastructures are closely related, but scientific and professional gatherings that include both fields simultaneously have rarely been organized until now. The development of a society, particularly its economic development, at present is unthinkable without a developed road and railway infrastructure.

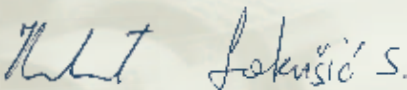
Great interest of participants in topics from the field of road and rail infrastructure during the CETRA 2010 conference in Opatija, where 140 papers were presented by participants from 29 countries, confirmed the soundness of the Department for Transportation Engineering's decision to once again organize such an international event. Positive comments received from participants in the first Conference motivated the Department for Transportation Engineering, Faculty of Civil Engineering - University of Zagreb, to continue with the organization of such events in the upcoming years (on a biennial basis).

The Organizing Committee has been working hard to make CETRA 2012 a very interesting conference, which will provide not only fruitful, scientific and professional experience but a chance to meet old friends and make new ones in Dubrovnik. Dubrovnik is widely known as the "pearl of the Adriatic" and a famous phrase related to this beautiful town is "Those who seek paradise on Earth should come to Dubrovnik and see Dubrovnik".

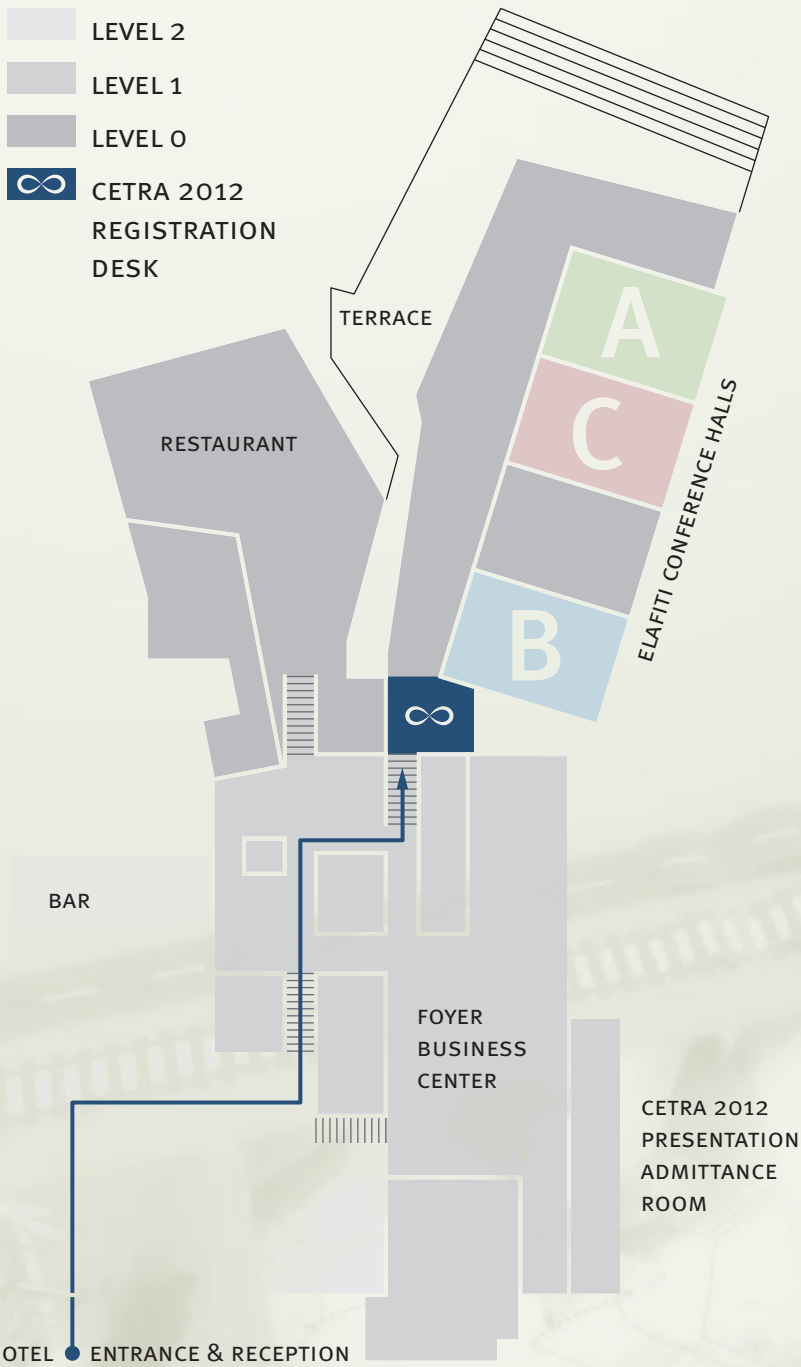
We would like to thank the various institutions, scientific committee members, sponsoring and donor companies and of course, the indefatigable staff of the Department of Transportation at Faculty of Civil Engineering in Zagreb, who have helped in the preparation and organization of CETRA 2012 Conference.

We recognize the significant contribution of more than 270 authors from 39 countries and 52 Universities. More than 145 excellent papers were published in the proceedings Road and Rail Infrastructure II. The full papers are being published by the Department of Transportation, Faculty of Civil Engineering at University of Zagreb in hardcopy and CD-ROM version of the conference proceedings.

We wish you all a pleasant and productive time in Dubrovnik at CETRA 2012 Conference.



Željko Korlaet and Stjepan Lakušić
Chairmen of CETRA 2012 Conference



CONFERENCE PROGRAMME

DAY 1 – Monday, 7 th May		
08:00 – 09:00	Registration of the Participants	
09:00 – 09:20	OPENING CEREMONY Željko Korlaet, Chairman of CETRA 2012 Vesna Dragčević, Dean of the Faculty of Civil Engineering Stjepan Lakušić, Chairman of CETRA 2012	
09:20 – 09:50	1 ST KEYNOTE LECTURE: “INNOVATION WITHOUT IMPLEMENTATION EQUALS ZERO” Prof. emeritus Klaus Rießberger	
09:50 – 10:20	2 ND KEYNOTE LECTURE: “LIFETIME ENGINEERING FOR ROADS” Prof. Laszlo Gaspar	
10:20 – 11:00	Coffee Break	
DAY 1 – Monday, 7 th May		
Time	Session	Session room
11:00 – 12:30	1A Pavement Behaviour	ELAFITI 4
	1B Innovations	ELAFITI 1
12:30 – 14:00	Lunch Break	
14:00 – 15:30	2A Traffic Safety	ELAFITI 4
	2B Rail Infrastructure	ELAFITI 1
	2C 1 st Smart Rail Regional Workshop	ELAFITI 3
15:30 – 16:00	Coffee Break	
16:00 – 17:15	3A Noise, Vibrations, Environmental Protection	ELAFITI 4
	3B Maintenance Planning	ELAFITI 1
	3C 1 st Smart Rail Regional Workshop	ELAFITI 3
19:00 – 23:00	Welcome Cocktail & Dinner on Event Ship “Sea Star”	
DAY 2 – Tuesday, 8 th May		
Time	Session	Session room
09:00 – 10:30	4A Road Infrastructure Planning	ELAFITI 4
	4B Urban Traffic Planning and Modelling	ELAFITI 1
	4C Railways – Simulation and Analysis	ELAFITI 3
10:30 – 11:00	Coffee Break	
11:00 – 12:30	5A Infrastructure Planning	ELAFITI 4
	5B Rail Traffic Safety	ELAFITI 1
	5C Pavement Management	ELAFITI 3
12:30 – 14:00	Lunch Break	
14:00 – 15:30	6A Geotechnics	ELAFITI 4
	6B Railways – Miscellaneous	ELAFITI 1
	6C Poster Session	ELAFITI 3
15:30 – 16:00	Coffee Break	
16:00 – 17:15	7A Infrastructure Management	ELAFITI 4
	7B Education and Transport	ELAFITI 1
	7C Vehicles	ELAFITI 3
20:00 – 23:00	Conference Gala Dinner	

DAY 3 – Wednesday, 9th May

Time	Session	Session room
09:00 – 10:30	8A Urban Transport Infrastructure	ELAFITI 4
	8B Pavement Mixtures	ELAFITI 1
	8C Workshop – Integrated Timetables	ELAFITI 3
10:30 – 11:00	Coffee Break	
11:00 – 12:15	9A Roads – Miscellaneous	ELAFITI 4
	9C Workshop – Integrated Timetables	ELAFITI 3
12:30 – 13:00	Conference Closure	
14:00 – 19:00	Conference Social Tour – Dubrovnik Islands (registrations for social tour will take place during the Conference)	

Remark · Napomena

Official languages of the conference are Croatian and English. We kindly ask the participants to acquire devices for simultaneous translation that will be available in front of each congress hall.

Službeni jezici konferencije su hrvatski i engleski. Ljubazno molimo sudionike konferencije da koriste uređaje za simultano prevođenje koji će biti dostupni u svakoj konferencijskoj dvorani.

Monday, 7th May 11:00 – 12:30	Session 1.A PAVEMENT BEHAVIOUR	Session room: ELAFITI 4	
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Chairmen: Prof. Laszlo Gaspar & Prof. Tatjana Rukavina

Time	Ref. No.	Paper Title / Author(s)
11:00 – 11:30	∞	KEYNOTE LECTURE: ADVANCES IN MATERIALS, DESIGN AND CONSTRUCTION TECHNOLOGIES FOR CONCRETE PAVING SYSTEMS Dr. Mark Snyder
11:30 – 11:45	135	RESISTANCE OF ASPHALT COURSES TO PERMANENT DEFORMATIONS IN THE FORM OF RUTS M.Šimun, A.Strineka & T.Rukavina
11:45 – 12:00	023	RESEARCH OF ASPHALT LAYERS BONDING IN LITHUANIAN PAVEMENT STRUCTURES A.Vaitkus, D. Čygas, A.Laurinavičius, V.Vorobjovas & R. Kleizienė
12:00 – 12:15	055	ANALYSIS IN THE TRANSITIONS OF FLEXIBLE PAVEMENTS USING FINITE ELEMENT METHOD Cassio Eduardo Lima de Paiva & Leandro Cardoso Trentin
12:15 – 12:30	203	COMPARISON OF THE LABORATORY AND FIELD TESTS USED FOR PAVEMENT DESIGN Lenka Ševelová, Jaroslav Hauser & Alice Kozumplíková

Each oral paper presentation is limited to 15 min.

12:30 – 14:00	Lunch Break
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Monday, 7th May 11:00 – 12:30		Session 1.B INNOVATIONS	Session room: ELAFITI 1
Chairmen: Prof. Klaus Rießberger & Prof. Stjepan Lakušić			
Time	Ref. No.	Paper Title / Author(s)	
11:00 – 11:15	011	INNOVATIVE MATERIALS FOR SUSTAINABLE RAILWAY TRACKS – ECOTRACK Stjepan Lakušić, Dubravka Bjegović, Ana Baričević & Ivo Haladin	
11:15 – 11:30	065	GREEN TRACK – ENVIRONMENTAL PERFORMANCE EVALUATION FOR “GREEN” TRAMWAY SUPERSTRUCTURE Paul Steckler, Brigitte Klug, Florian Gasser & Werner Wehr	
11:30 – 11:45	168	FEM DRIVEN DESIGN PROCESS OF INNOVATIVE INTERMODAL TRUCK – RAIL SOLUTION Wieslaw Krason, Tadeusz Niezgoda & Krzysztof Damaziak	
11:45 – 12:00	212	ENERGY CONSUMPTION INDUCED BY OPERATION PHASE OF RAILWAYS AND ROAD INFRASTRUCTURES Alex Coiret, Pierre-Olivier Vandanjon, Romain Bosquet & Agnès Jullien	
12:00 – 12:15	213	RUCONBAR – GREENING THE MARKET OF NOISE PROTECTION SOLUTIONS S.Lakušić, D.Bjegović, I.Haladin, A.Baričević & M.Serdar	
12:15 – 12:30	233	MITIGATING RISKS IN ROAD AND RAIL PROJECTS Dario Garavaglia	
Each oral paper presentation is limited to 15 min.			
12:30 – 14:00	Lunch Break		



Monday, 7th May 14:00 – 15:30		Session 2.A TRAFFIC SAFETY	Session room: ELAFITI 4
Chairmen: Prof. Christos Pyrgidis & Prof. Stjepan Lakušić			
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 14:30	235	RUBBERIZED CONCRETE NOISE BARRIERS – FROM IDEA TO FINAL PRODUCT Stjepan Lakušić	
14:30 – 14:45	074	SAFETY MEASURES ON RAIL AND ROAD ENGINEERING STRUCTURES – A COMPARATIVE ASSESSMENT Christos Pyrgidis & Fotini Kehagia	
14:45 – 15:00	144	METHODOLOGY FOR SAFETY PERFORMANCE ASSESSMENT OF HIGHWAY INFRASTRUCTURE – ISSUES, RECENT APPLICATIONS AND FUTURE DIRECTIONS Bhagwant Persaud	
15:00 – 15:15	182	DRIVER’S DISTRACTION AND INATTENTION PROFILE IN TYPICAL URBAN HIGH SPEED ARTERIALS Helen Missokkefalou & Nikolaos Eliou	
15:15 – 15:30	101	THE ANALYSIS OF TRAFFIC ACCIDENTS ON LITHUANIAN STATE ROADS Stanislav Mamčič & Henrikas Sivilevičius	
Each oral paper presentation is limited to 15 min.			
15:30 – 16:00	Coffee Break		



Monday, 7th May
14:00 – 15:30

Session 2.B
RAIL INFRASTRUCTURE

Session room:
ELAFITI 1



Chairman: Prof. Stefano Ricci

Time	Ref. No.	Paper Title / Author(s)
14:00 – 14:30	∞	KEYNOTE LECTURE: ENERGY AND ENVIRONMENTAL ASPECTS OF HIGH-SPEED RAIL Prof. Roderick A. Smith
14:30 – 14:45	115	COMPARATIVE ANALYSIS OF ALTERNATIVE FIXED TRACK TECHNOLOGIES FOR THESSALONIKI AIR-LINK CONNECTION Panagiotis Papaioannou, Alexandros Deloukas, Ioannis Politis & Manos Vougioukas
14:45 – 15:00	123	AIRPORT ACCESS INFRASTRUCTURE CRITICAL ISSUE OF THE INTERMODAL CHAIN Antonin Kazda
15:00 – 15:15	107	DEVELOPMENT OF METRO ZAGREB PROJECT Davorin Kolić
15:15 – 15:30	160	ÖBB RAILWAY BRIDGE CONSTRUCTION – CHALLENGES IN USING THE EUROCODES Thomas Petraschek
Each oral paper presentation is limited to 15 min.		
15:30 – 16:00		Coffee Break


Monday, 7th May
14:00 – 15:30


Session 2.C
1ST SMART RAIL REGIONAL WORKSHOP

Session room:
ELAFITI 3



Time	Title / Author(s)
14:00 – 14:30	WELCOME AND PURPOSE OF THE WORKSHOP Wolfgang H. Steinicke
14:30 – 15:00	PRESENTATIONS OF THE SMART RAIL PROJECT Ken Gavin
15:00 – 15:30	INTERIM REQUIREMENTS / GAPS IDENTIFICATION TO PROJECT MAIN AREAS / WP TOGETHER WITH USERS PRESENT AND PRE-PRIORITISATION BY USER COMMENTS Michael Robson & Frank Panse
15:30 – 16:00	Coffee Break

Monday, 7th May 16:00 – 17:15	Session 3.A NOISE, VIBRATIONS, ENVIRONMENTAL PROTECTION	Session room: ELAFITI 4	
Chairmen: Prof. D. Lauwers & Prof. V. Dragčević			
Time	Ref. No.	Paper Title / Author(s)	
16:00 – 16:15	016	DYNAMIC EFFECT OF MOVING LOAD ON ASPHALT PAVEMENT Jozef Melcer & Gabriela Lajčáková	
16:15 – 16:30	033	LOW NOISE PAVEMENTS: AVAILABLE SOLUTIONS Jean-Paul Michaut	
16:30 – 16:45	109	ROAD TRAFFIC NOISE MODELING AT ROUNDABOUTS Saša Ahac & Vesna Dragčević	
16:45 – 17:00	151	MODELLING THE IMPACT OF TRAFFIC ON QUALITY OF LIFE: SCENARIO EVALUATION FOR THE CITY OF GHENT Dominique Gillis, Dirk Lauwers, Luc Dekoninck & Dick Botteldooren	
17:00 – 17:15	022	RAIL ROUGHNESS MEASUREMENT AND ANALYSIS IN FRAME OF RAIL VEHICLE PASS-BY NOISE MEASUREMENTS Stjepan Lakušić, Ivo Haladin, Ante Jukić, Nikola Andrašić & Petar Piplica	
Each oral paper presentation is limited to 15 min.			
19:00 – 23:00	Welcome Cocktail & Dinner on Event Ship “Sea Star”		

Monday, 7th May 16:00 – 17:15	Session 3.B MAINTENANCE PLANNING	Session room: ELAFITI 1	
Chairmen: Prof. Željko Korlaet			
Time	Ref. No.	Paper Title / Author(s)	
16:00 – 16:15	034	WORLD-CLASS PERFORMANCE BASED MAINTENANCE CONTRACTS – RECENT TRENDS Pekka Pakkala & Antti Talvitie	
16:15 – 16:30	093	ON A NOVEL OPTIMISATION MODEL AND SOLUTION METHOD FOR TACTICAL RAILWAY MAINTENANCE PLANNING Franziska Heinicke, Axel Simroth & Roberto Tadei	
16:30 – 16:45	128	PREDICTION MODEL FOR THE COST OF ROAD REHABILITATION AND RECONSTRUCTION WORKS Jelena Cirilovic, Nevena Vajdic, Goran Mladenovic & Cesar Queiroz	
16:45 – 17:00	214	EFFECTIVE ROAD MAINTENANCE WORKS PLANNING Ján Mikolaj, Ľubomír Pepucha, Peter Časnocha & Ľuboš Remek	
17:00 – 17:15	225	MICRO-SURFACING ON FRENCH HIGHWAYS: RECENT SUCCESSFUL EXPERIENCES Jean-Etienne Urbain, Mario Medved, Eric Layerle & Ivan Kolarić	
Each oral paper presentation is limited to 15 min.			
19:00 – 23:00	Welcome Cocktail & Dinner on Event Ship “Sea Star”		

Monday, 7th May		Session 3.C	Session room:
16:00 – 17:15	1ST SMART RAIL REGIONAL WORKSHOP		ELAFITI 3
Time	Title / Author(s)		
16:00 – 16:15	ACTIONS AND RESPONSE BY WP-MANAGERS INCL. FIRST SET OF RESEARCH DIRECTIONS / POSSIBLE SOLUTIONS TO THE PROBLEMS		
16:15 – 16:30	MONITORING AND INSPECTION Ken Gavin		
16:30 – 16:45	ASSESSMENT AND MODELS Alan O'Connor		
16:45 – 17:00	NEW REHABILITATION TECHNOLOGIES Irina Stipanovic Oslakovic		
17:00 – 17:15	WHOLE LIFE-CYCLE COST CALCULATION TOOLS Friderik Knez		
	FEEDBACK AND RESULTING CONSEQUENCES FOR REQUIREMENTS, NEEDS AND GAPS / SUMMARY AND CONCLUSIONS – WAY AHEAD		
19:00 – 23:00	Welcome Cocktail & Dinner on Event Ship "Sea Star"		



Tuesday, 8th May		Session 4.A	Session room:
09:00 – 10:30	ROAD INFRASTRUCTURE PLANNING		ELAFITI 4
Chairmen: Prof. D. Lauwers & Prof. Ž. Korlaet			
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 09:30	∞	KEYNOTE LECTURE: ESSENTIAL NECESSITY TO SUPPORT THE FINANCING OF THE ROAD INFRASTRUCTURE Christophe Nicodème	
09:30 – 09:45	028	HIGHWAY A8, SECTION ROGOVIČI – MATULJI, INFLUENCE OF GENERAL PUBLIC ON DESIGN SOLUTIONS Nebojša Opačić & Tomislav Kraljić	
09:45 – 10:00	138	APPLICATION OF MULTICRITERIA ANALYSIS FOR SELECTION OF ALTERNATIVE IN THE ROAD PROJECTS A.Glavinov, Z.Krakovovski, S.Ognjenovic & K.Mitkovska-Trendova	
10:00 – 10:15	163	STRATEGIC TRANSPORT INFRASTRUCTURE IN SOUTH EAST EUROPE: PLANNING EXPERIENCE AND PERSPECTIVES IN THE CONTEXT OF THE EUROPEAN TRANSPORT POLICY M.D. Miltiadou, S.Basbas, G.Mintsis, C.Taxiltaris & A.Tsakiropoulou	
10:15 – 10:30	180	DECISION MAKING PROCESS ON THE ANTWERPEN OOSTERWHEEL LINK: LESSONS LEARNT Dirk Lauwers	
Each oral paper presentation is limited to 15 min.			
10:30 – 11:00	Coffee Break		



Tuesday, 8th May		Session 4.B	Session room:
09:00 – 10:30		URBAN TRAFFIC PLANNING AND MODELLING	ELAFITI 1
Chairmen: Prof. C. Pyrgidis & Prof. R. W. Eger			
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 09:15	042	THE IMPACT OF THE IMPLEMENTATION OF GREEN WAVE IN THE TRAFFIC LIGHT SYSTEM OF A TRAMWAY LINE – THE CASE OF ATHENS TRAMWAY Christos Pyrgidis & Martha Chatziparaskeva	
09:15 – 09:30	054	REQUIREMENTS FOR HIGH QUALITY CYCLING INFRASTRUCTURE DESIGN Tadej Brezina, Martin Niegl, Nikolaus Ibesich & Helmut Lemmerer	
09:30 – 09:45	086	PROGRAM FOR DEVELOPMENT OF BICYCLE TRAFFIC IN THE CITY OF ZAGREB Krunoslav Tepeš, Marijan Ključarić & Hrvoje Pilko	
09:45 – 10:00	091	CRITICAL PLANNING AND DESIGN PARAMETERS FOR GARAGES Rudolf Wilhelm Eger	
10:00 – 10:15	100	MODEL FOR SHORT – TERM FORECAST ON VEHICLES IN BITOLA TOWN Vaska Atanasova & Lidija Markovic	
10:15 – 10:30	130	E-MOBILITY IN URBAN AREAS AND THE IMPACT OF PARKING ORGANISATION Harald Frey, Anna Mayer thaler, Paul Pfaffenbichler & Tadej Brezina	
Each oral paper presentation is limited to 15 min.			
10:30 – 11:00	Coffee Break		



Tuesday, 8th May		Session 4.C	Session room:
09:00 – 10:30		RAILWAYS – SIMULATION AND ANALYSIS	ELAFITI 3
Chairmen: Prof. J. Madejski & Prof. G. Longo			
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 09:15	032	DEMAND FOR WAYSIDE TRAIN MONITORING SYSTEMS IN THE NETWORK OF SLOVENIAN RAILWAYS Andreas Schöbel & Danilo Vek	
09:15 – 09:30	147	BEHAVIORAL ANALYSIS OF DEPARTURE TIME DECISION CONSIDERING REDUNDANCY OF RAILROAD NETWORK Kazuyuki Takada, Makoto Fujiu, Shigeki Sugiyama	
09:30 – 09:45	227	CAPACITY VS. RELIABILITY IN RAILWAYS: A STOCHASTIC MICRO-SIMULATION APPROACH Giovanni Longo & Giorgio Medeossi	
09:45 – 10:00	228	USING SIMULATION TO ASSESS INFRASTRUCTURE PERFORMANCE IN MULTICRITERIA EVALUATION OF RAILWAY PROJECTS G.Longo, G. Medeossi & E. Padoano	
10:00 – 10:15	089	EXPERIENCES FROM BRIDGE SCOUR INSPECTIONS BY USING TWO ASSESSMENT METHODS ON 100 RAILWAY BRIDGES IN IRELAND Damir Bekic, Eamon McKeogh, Igor Kerin, Stephen Hand & Gillian Bruton	
10:15 – 10:30	096	ENSURING SAFETY OF OPERATION BY AUTOMATIC MEASUREMENT OF ROLLING STOCK WHEELS GEOMETRY Janusz Madejski	
Each oral paper presentation is limited to 15 min.			
10:30 – 11:00	Coffee Break		



Tuesday, 8th May
11:00 – 12:30

Session 5.A
INFRASTRUCTURE PLANNING

Session room:
ELAFITI 4



Chairman: Prof. Mirjana Tomičić-Torlaković & Prof. Darko Moslavac

Time	Ref. No.	Paper Title / Author(s)
11:00 – 11:15	154	RAILWAY AS THE SOLUTION FOR ROAD CONGESTIONS Darja Šemrov, Aleš Pavšek & Franc Zemljič
11:15 – 11:30	084	OVERVIEW OF THE RAILWAY LINE ZAGREB - RIJEKA AS PART OF THE SPATIAL-TRAFFIC STUDY OF THE PRIMORJE-GORSKI KOTAR COUNTY AND THE CITY OF RIJEKA Stjepan Kralj
11:30 – 11:45	114	ONE MODEL FOR RAIL INFRASTRUCTURE PROJECTS SELECTION Dragana Macura, Rešad Nuhodžić, Nebojša Bojović & Nikola Knežević
11:45 – 12:00	116	APPLICATION OF MULTICRITERIA OPTIMIZATION IN THE RAILWAY LINE DESIGNING AT THE LEVEL OF THE GENERAL PROJECT Lj.Marković, Lj.Milič Marković & G.Čirovič
12:00 – 12:15	133	BENEFITS OF A MANAGED ENVIRONMENT ON A LARGE INFRASTRUCTURE PROJECT Silvano Gritti, Andrea Amante & Armando Manes
12:15 – 12:30	183	USING RAILWAY SIMULATION AS A BASIS FOR INFRASTRUCTURE PLANNING – FOCUSING ON STRUCTURAL CHANGES AT TRAIN STATION EXITS Katalin Jurecka
Each oral paper presentation is limited to 15 min.		
12:30 – 14:00	Lunch Break	

Tuesday, 8th May
11:00 – 12:30


Session 5.B
RAIL TRAFFIC SAFETY


Session room:
ELAFITI 1



Chairmen: Prof. T. J. Mlinarić & Prof. S. Lakušić

Time	Ref. No.	Paper Title / Author(s)
11:00 – 11:15	050	ANTI-SLIP RUBBER BASE FOR PEDESTRIAN CROSSINGS Marko Hoič & Igor Keser
11:15 – 11:30	079	CONTROL SYSTEM FOR TRAINS IN MOVEMENT Dobrinka Atmadzhova, Emil Dimitrov & Nencho Georgiev Nenov
11:30 – 11:45	126	INTEGRATING HUMANS FACTORS IN THE ANALYSIS OF THE INTERACTION “TRAM- CAR DRIVERS” Fatiha moutchou, Abdelghani Cherkaoui & El Miloudi El koursi
11:45 – 12:00	150	A MODEL FOR ASSESSING COLLISION RISK ON AUTOMATIC LEVEL CROSSINGS Mohamed Ghaze
12:00 – 12:15	210	CONTINUOUS WELDED RAIL (CWR) TRACK BUCKLING AND SAFETY CONCEPTS Sanjin Albinović & Mirna Hebib-Albinović
12:15 – 12:30	234	ROCKFALL BARRIERS – TESTING ACCORDING TO RIGOROUS AND COMPREHENSIVE CRITERIA Volker Leonhardt
Each oral paper presentation is limited to 15 min.		
12:30 – 14:00	Lunch Break	

Tuesday, 8th May 11:00 – 12:30	Session 5.C PAVEMENT MANAGEMENT	Session room: ELAFITI 3	
Chairman: Prof. Tatjana Rukavina			
Time	Ref. No.	Paper Title / Author(s)	
11:00 – 11:15	035	VERTICAL DYNAMIC LOAD IMPACT ON THE PAVEMENT OF AN URBAN FRONT ENGINE BUS Pablo Yugo Yoshiura Kubo & Cassio Eduardo Lima de Paiva	
11:15 – 11:30	039	PAVEMENT DESIGN OPTIMISATION CONSIDERING COSTS AND PREVENTIVE INTERVENTIONS Adelino Jorge Lopes Ferreira & João Santos	
11:30 – 11:45	046	PERMANENT DEFORMATIONS OF ASPHALT MIXTURES FROM PAVEMENT WEARING COURSES Adrian Burlacu & Carmen Răcănel	
11:45 – 12:00	102	DEPENDENCY BETWEEN ROAD SURFACE GEOMETRY AND SKID RESISTANCE Markus Weise & Wolfram Ressel	
12:00 – 12:15	119	CREEP RECOVERY BEHAVIOUR OF BITUMINOUS BINDERS – RELEVANCE TO PERMANENT DEFORMATION OF ASPHALT PAVEMENTS G.A.J. Mturi, M.Nkgapele & J.O'Connell	
12:15 – 12:30	166	APPLICATION OF INFRARED CAMERA FOR QUALITY CONTROL DURING PAVING Bojan Milovanovic, Josipa Domitrovic & Tatjana Rukavina	
Each oral paper presentation is limited to 15 min.			
12:30 – 14:00	Lunch Break		

Tuesday, 8th May 14:00 – 15:30	Session 6.A GEOTECHNICS	Session room: ELAFITI 4	
Chairmen: Prof. Vesna Dragčević & Prof. Meho Saša Kovačević			
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 14:15	015	AN ALTERNATIVE ANALYSIS FOR DEVELOPING THE SWELLING MODEL FOR EXPANSIVE CLAYS Moshe Livneh	
14:15 – 14:30	068	A COMPARISON OF 2D AND 3D NUMERICAL SIMULATION FOR TUNNEL EXCAVATION ACCOMPANIED BY MEASUREMENT RESULTS Mario Bačić, Danijela Marčić & Meho Saša Kovačević	
14:30 – 14:45	064	LARGE EMBANKMENT NEAR SUHAREKE AT KOSOVO MOTORWAY Ljerka Bušelić & Verica Gjetvaj	
14:45 – 15:00	067	THE STUPICA TUNNEL – ROCKFALL PROTECTION Meho Saša Kovačević, Antonia Mirčeta & Lovorka Librić	
15:00 – 15:15	226	PROTECTION MEASURES AGAINST DEBRIS FLOWS, USING FLEXIBLE RING NET BARRIERS IN THE TEUFELSKADRIC, GERMANY R.Bucher, C.Wendeler & V.Budimir	
15:15 – 15:30	234	APPLICATION OF TRIAXIAL TRIAX GEOGRIDS IN ROAD AND RAILWAY INFRASTRUCTURE David Kneifl	
Each oral paper presentation is limited to 15 min.			
15:30 – 16:00	Coffee Break		

Tuesday, 8th May
14:00 – 15:30

Session 6.C
POSTER SESSION

Session room:
ELAFITI 3



Chairman: Prof. Tatjana Rukavina

Time	Ref. No.	Paper Title / Author(s)
14:00 – 15:30	059	PAVEMENT WIDENING ON ROAD CURVES Željko Korlaet, Tomislav Dobrica & Ivica Stančerić
	193	DESIGN ELEMENTS OF MODERN ROUNDABOUTS Mario Njegovec, Željko Stepan & Ana Rigo
	217	THE BEHAVIOUR OF PASSIVELY SAFE ROADSIDE COLUMNS IN IMPACT WITH VEHICLES Višnja Tkalčević Lakušić, Stjepan Lakušić
	095	SPECIFIC FEATURES OF A5 HIGHWAY – BRIDGE OVER RIVER DRAVA Vladimir Moser, Sanja Dimter & Ivana Barišić
	192	FUTURE TRANSPORT NETWORK OF THE CITY OF DUBROVNIK Igor Majstorović, Mario Njegovec & Ana Rigo
	062	PERMANENT DEFORMATION OF POLYMER MODIFIED BITUMEN Vesna Očelić Bulatović, Vesna Rek & Kristina Jurkaš Marković
	057	TOURIST POTENTIAL OF INDUSTRIAL RAILWAY NETWORK IN BARANYA Sanja Lončar-Vicković, Dina Stober & Zlata Dolaček-Alduk
	137	SPECIFICITIES OF PROJECT FOR RAILWAY LINE ON CORRIDOR VIII Zoran Krakutovski, Darko Moslavac & Zlatko Zafirovski
	036	THE IMPORTANCE OF INDUSTRIAL TRACK IN RAILWAY INFRASTRUCTURE Waldemar Alduk, Sanja Dimter & Zlata Dolaček-Alduk
	021	EFFICIENT AND CUSTOMER FRIENDLY LUGGAGE LOCKING Bernhard Rüger, Hans-Christian Graf & Burkhard Stadlmann
	012	ARC WELDING OF GROOVED RAILS - MANUAL METAL ARC WELDING VERSUS FLUX CORED ARC WELDING Stjepan Lakušić, Tamara Džambas, Maja Ahac, Ivo Haladin & Ivan Duvnjak
	048	ACCIDENTS AT THE LEVEL CROSSINGS IN LITHUANIAN RAILWAYS Inesa Gailienė, Vaidas Ramunas & Kęstutis Skerys
	230	SOME EXPERIENCES IN PRODUCTION OF CONCRETE MIXES DESIGNS FOR CONSTRUCTION OF CORRIDOR X IN SERBIA Z.Grdić, G.Topličić-Čurčić, N.Ristić & I.Despotović
	075	EXTENDING LIFE OF CONCRETE BRIDGE DECKS THROUGH EARLY DETERIORATION DETECTION BY NDE METHODS Nenad Gucunski, Ali Maher & Hamid Ghasemi
	106	ANALYSIS OF ROAD TRAFFIC SAFETY AFTER THE CONSTRUCTION OF FULL PROFILE OF THE RIJEKA-ZAGREB MOTORWAY Željko Denona, Boris Huzjan & Tatjana Matković
	105	INTEGRATED NOISE PROTECTION BARRIERS AND SOLAR POWER PLANT ON RIJEKA BYPASS Boris Huzjan & Sanjin Velebit Pešut
15:30 – 16:00		Coffee Break

Tuesday, 8th May		Session 6.B	Session room:
14:00 – 15:30		RAILWAYS – MISCELLANEOUS	ELAFITI 1
Chairmen: Prof. Mirjana Tomičić-Torlaković & Prof. Andreas Schöbel			
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 14:15	204	RENAISSANCE OF THE RAILWAY CONNECTION TRSTENA – NOWY TARG J. Muzik, Z. Gocálová, A. Villim, J. Šestáková & L. Pepucha	
14:15 – 14:30	071	LIGHT RAIL TRACK STRUCTURE COMPARATIVE ANALYSIS Mirjana Tomičić-Torlaković & Vladan Branković	
14:30 – 14:45	078	TECHNICAL PARAMETERS FOR SELECTION OF ELASTIC RAIL FASTENINGS Tatjana Simić	
14:45 – 15:00	231	MODERNIZATION OF RAIL ROUTE 10 – KOSOVO RAILWAYS Fitim Shala	
15:00 – 15:15	209	EFFECTS OF TRAM TRACK DESIGN AND EXPLOITATION PARAMETERS ON GAUGE VARIANCE Stjepan Lakušić, Maja Ahac & Ivo Haladin	
15:15 – 15:30	194	TRANSITION ZONES ON THE RAILWAY TRACK – OVERVIEW Marko Vajdić, Irina Stipanović Oslaković & Stjepan Kralj	
Each oral paper presentation is limited to 15 min.			
15:30 – 16:00	Coffee Break		



Tuesday, 8th May		Session 7.A	Session room:
16:00 – 17:15		INFRASTRUCTURE MANAGEMENT	ELAFITI 4
Chairmen: Prof. Vesna Dragčević			
Time	Ref. No.	Paper Title / Author(s)	
16:00 – 16:15	043	PUBLIC BUSES ON EMERGENCY LANES – A VERY SPECIAL USE OF A MOTORWAY IN AUSTRIA Wolfgang J. Berger	
16:15 – 16:30	087	THE POLISH SCIENTIFIC RESEARCHES ON THE TOPIC OF ELECTRONIC TOLL COLLECTION Gabriel Nowacki	
16:30 – 16:45	098	THE FIRST EXPERIENCE OF ETC USING IN THE SILESIA REGION Aleksander Śładkowski & Grzegorz Twardoch	
16:45 – 17:00	202	A NEW METHODOLOGY TO ASSESS THE PERFORMANCE OF ROAD SURFACE MARKINGS F. Asdrubali, C. Buratti, E. Moretti, F. D'Alessandro & S. Schiavoni	
17:00 – 17:15	229	A TENTATIVE TOLL MOTORWAY SOLUTION ON DURRES–TIRANA–ELBASAN ROAD CORRIDOR Faruk Jusuf Kaba	
Each oral paper presentation is limited to 15 min.			
20:00 – 23:00	Conference Gala Dinner		



Tuesday, 8th May
16:00 – 17:15

Session 7.B
EDUCATION AND TRANSPORT

Session room:
ELAFITI 1



Chairmen: Prof. Sanja Dimter

Time	Ref. No.	Paper Title / Author(s)
16:00 – 16:15	104	RESEARCH ON COMPETENCES OF STUDENTS OF CIVIL ENGINEERING STUDIES IN THE FIELD OF ROAD CONSTRUCTION Zlata Dolaček-Alduk & Sanja Dimter
16:15 – 16:30	149	NEARLY 10 YEARS OF TEACHING RAILWAY SIMULATION AT THE VIENNA UNIVERSITY OF TECHNOLOGY Katalin Jurecka
16:30 – 16:45	045	THE ROLE OF A POLICY MADE ROAD CATEGORISATION FOR SUSTAINABLE ROUTE NAVIGATION UNDER NORMAL AND CONGESTED TRAFFIC CONDITIONS Koen De Baets
16:45 – 17:00	206	TRUCK TRIP GENERATION RATES FOR DIFFERENT TYPES OF FACILITIES IN POLAND Tomasz Kulpa
17:00 – 17:15	232	UNDERSTANDABLE, VISIBLE AND CLEAR INFORMATION TO THE DRIVER – DO WE KNOW HOW TO PROVIDE IT? Uroš Brumec, Aleš Merkun & Nina Verzolak Hrabar

Each oral paper presentation is limited to 15 min.

19:00 – 23:00 **Conference Gala Dinner**

Tuesday, 8th May
16:00 – 17:15

Session 7.C
VEHICLES

Session room:
ELAFITI 3



Chairmen: Prof. S. Ricci & Prof. J. Madejski

Time	Ref. No.	Paper Title / Author(s)
16:00 – 16:15	019	BOARDING ACCESSIBILITY TO TRAIN VEHICLES FOR EVERYONE Bernhard Rürger & Goran Simic
16:15 – 16:30	020	DESIGN OF RAILWAY INTERIORS IN ORDER TO REDUCE DWELL TIME Bernhard Rürger
16:30 – 16:45	088	VIRTUAL ROAD MODELS FROM DYNAMIC MEASUREMENTS Kai Tejkl & Wolfram Ressel
16:45 – 17:00	167	IDEA AND TESTS OF THE RAILWAY WAGON WITH A ROTATABLE PLATFORM FOR INTERMODAL TRANSPORT T. Niezgodna, W. Krason & W. Barnat
17:00 – 17:15	190	TRACK ACCESS CHARGE ALGORITHMS IN EU RAILWAYS: A DYNAMIC BENCHMARKING Francesca Ciuffini, Stefano Ricci & Giulio Rocco Sitongia

Each oral paper presentation is limited to 15 min.

19:00 – 23:00 **Conference Gala Dinner**

Wednesday, 9th May		Session 8.A	Session room:
09:00 – 10:30		URBAN TRANSPORT INFRASTRUCTURE	ELAFITI 4
Chairman: Prof. Davor Brčić			
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 09:15	058	SPEED AS AN ELEMENT FOR DESIGNING ROUNDABOUTS Hrvoje Pilko, Davor Brčić & Nikola Šubić	
09:15 – 09:30	136	DEMOGRAPHIC MODEL “AGE-COHORT” FOR MODELLING OF URBAN MOBILITY IN LONG TERM Zoran Krakutovski	
09:30 – 09:45	165	MINI-ROUNDABOUTS IN URBAN AREAS Sanja Šurdonja, Sergije Babić, Aleksandra Deluka-Tibljaš & Marijana Cuculić	
09:45 – 10:00	169	NEW TRANSPORTATION SYSTEM OF THE CITY OF DUBROVNIK Damir Pološki, Željko Stepan & Igor Majstorović	
10:00 – 10:15	027	INFRASTRUCTURE INVESTMENTS AND ITS IMPACT ON REGIONAL ECONOMY – EVIDENCE FROM TWO CASE STUDIES AS STARTING POINT FOR A PLANNING TOOL Roman Klementsčitz	
10:15 – 10:30	140	APPROACH TO DEALING WITH THE TRANSPORT DEMAND MANAGEMENT IN CITIES WITH REVIEW TO THE CITY OF ZAGREB M.Slavulj, D.Brčić & Lj.Šimunović	
Each oral paper presentation is limited to 15 min.			
10:30 – 11:00		Coffee Break	



Wednesday, 9th May		Session 8.B	Session room:
09:00 – 10:30		PAVEMENT MIXTURES	ELAFITI 1
Chairmen: Prof. T.Rukavina & Prof. V. Rek			
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 09:15	187	PAVEMENT SURFACES IN URBAN AREAS Marijana Cuculić, Sergije Babić, Aleksandra Deluka-Tibljaš & Sanja Šurdonja	
09:15 – 09:30	038	LABORATORY TESTS CONCERNING FATIGUE BEHAVIOUR OF ASPHALT MIXTURES Carmen Răcănel & Adrian Burlacu	
09:30 – 09:45	049	THE INFLUENCE OF COMPACTION METHODS ON PROPERTIES OF ASPHALT MIXTURES: IMPACT COMPACTION VS. SLAB COMPACTION Mizan H. Moges & Carsten Karcher	
09:45 – 10:00	061	BINDER MOBILIZATION IN RAP AND ITS CONTRIBUTION TO MIX PERFORMANCE X. Carbonneau, F. Lubineau, B. Yvinec & J.P. Michaut	
10:00 – 10:15	083	THE COMPARISON BETWEEN WHEEL TRACKING AND TRIAXIAL CYCLIC COMPRESSION TEST ON DIFFERENT ASPHALT MIXTURES N. Zavrtnik, R.Bašelj, M.Kozamernik, G.Turk & M.Tušar	
10:15 – 10:30	220	COMPARASION OF LOW-TEMPERATURE BITUMINOUS MIXTURES SELECTED PROPERTIES Josef Zak, Jiri Vavricka & Silvia Stefunkova	
Each oral paper presentation is limited to 15 min.			
10:30 – 11:00		Coffee Break	



Wednesday, 9th May
09:00 – 10:30

Session 8.C
WORKSHOP – INTEGRATED TIMETABLES

Session room:
ELAFITI 3



Chairman: Prof. Peter Veit

Time	Ref. No.	Paper Title / Author(s)
09:00 – 09:45		WELCOME AND PURPOSE OF THE WORKSHOP Peter Veit
09:45 – 10:00	145	INTEGRATED PERIODIC TIMETABLE SCHEDULING – TOWARDS AN INTEGRATED TIMETABLE ACROSS CENTRAL EUROPE Stefan Walter
10:00 – 10:15	146	THE DEVELOPMENT OF THE INTEGRATED PERIODIC TIMETABLE IN AUSTRIA Helmut Uttenthaler
10:15 – 10:30	117	INTEGRATED PERIODIC TIMETABLE IN HUNGARY – EXPERIENCES, HELP FOR VISION Viktor Borza & János Földiák
Each oral paper presentation is limited to 15 min.		
10:30 – 11:00		Coffee Break

Wednesday, 9th May
11:00 – 12:15

Session 9.A
ROADS – MISCELLANEOUS

Session room:
ELAFITI 4



Chairman: Prof. Vesna Dragčević

Time	Ref. No.	Paper Title / Author(s)
11:00 – 11:15	191	SIGHT DISTANCE TESTS AT ROAD INTERSECTIONS WITH UNFAVORABLE ANGLES Ivica Stančerić, Željko Korlaet & Vesna Dragčević
11:15 – 11:30	076	DESIGNS OF VIADUCTS ON THE SECTION OF PAN–EUROPEAN CORRIDOR X IN SOUTH SERBIA Slavica Vucetic Abinun
11:30 – 11:45	077	FINAL DESIGN FOR WIDENING OF BRIDGE OVER NISAVA RIVER, ON THE RIGHT CARRIAGEWAY OF THE MOTORWAY E80: NIS–DIMITROVGRAD Jasmina Damjanovic & Igor Stefanovic
11:45 – 12:00	017	THE FEASIBILITY OF PIEZOELECTRIC ENERGY HARVESTING FOR CIVIL APPLICATIONS Simon Bos
12:00 – 12:15	176	TRAFFIC LIGHTS ON CONSECUTIVE INTERSECTIONS AND PEDESTRIAN CROSSINGS ALONG LINEAR SETTLEMENTS LOCATED ON NATIONAL ROADS A. F. Burlacu, M. Dicu & V. Anton
Each oral paper presentation is limited to 15 min.		
12:30 – 13:00		Conference Closure
14:00 – 19:00		Conference Social Tour – Dubrovnik Islands (registrations for social tour will take place during the Conference)

Wednesday, 9th May
11:00 – 12:15

Session 9.C
WORKSHOP – INTEGRATED TIMETABLES

Session room:
ELAFITI 1



Chairmen: Prof. Tomislav Josip Mlinarić & Doc. Andreas Schöbel

Time	Ref. No.	Paper Title / Author(s)
11:00 – 11:15	031	CONCEPT FOR AN INTEGRATED TIMETABLE IN BOSNIA AND HERZEGOVINA Dzenet Ljevo & Andreas Schöbel
11:15 – 11:30	132	TECHNICAL AND TECHNOLOGICAL PRECONDITIONS FOR IMPLEMENTATION OF INTEGRATED TIMETABLE IN REGIONAL PASSENGER TRANSPORT WITH THE REP. OF HUNGARY T. J. Mlinarić, Denis Lauš & Melkior Vilić
11:30 – 11:45	178	IMPLEMENTATION OF PERIODIC TIMETABLE IN REGIONAL PASSENGER TRANSPORT OF REPUBLIC OF CROATIA T. J. Mlinarić, T. Pleša & I. Balagić
11:45 – 12:00	094	ON THE DELIVERY ROBUSTNESS OF TRAIN TIMETABLES WITH RESPECT TO PRODUCTION REPLANNING POSSIBILITIES S. Gestrelus, M. Aronsson, M. Forsgren & H. Dahlberg
12:00 – 12:15	131	TECHNICAL AND TECHNOLOGICAL PRECONDITIONS FOR IMPLEMENTATION OF INTEGRATED TIMETABLE IN REGIONAL PASSENGER TRANSPORT WITH THE REP. OF SLOVENIA T. J. Mlinarić, T. Pleša & I. Ljubaj

Each oral paper presentation is limited to 15 min.

12:30 – 13:00 **Conference Closure**

14:00 – 19:00 **Conference Social Tour – Dubrovnik Islands**
(registrations for social tour will take place during the Conference)



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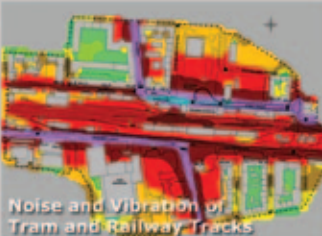
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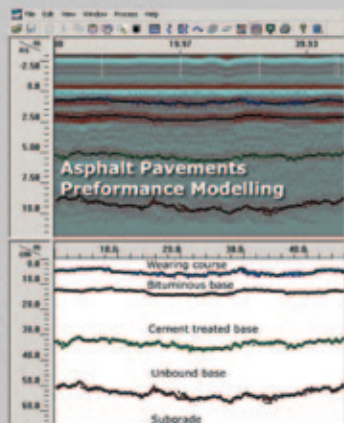
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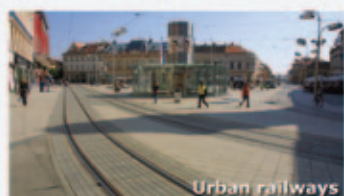
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