

CETRA 2020*

Final Programme

6th International Conference on Road and Rail Infrastructure

20–21 May 2021
Zagreb, Croatia

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Organizer
University of Zagreb
Faculty of Civil Engineering
Department of Transportation



CETRA2020*

6th International Conference on Road and Rail Infrastructure
20-21 May 2021, Zagreb, Croatia

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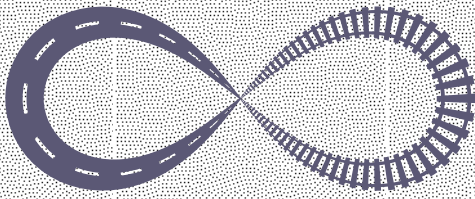
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on Road and Rail Infrastructure**

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CONFERENCE PROGRAMME – SHORT VERSION

DAY 1		
Thursday, May 20 th 2021		
10:00 - 10:20	Opening Ceremony	A-OPC
10:20 - 11:30	Keynote & General sponsor lectures	A-KEY
11:30 - 12:00	Break	
12:00 - 13:00	Building Information Modelling	A-1
	Rail vehicles and power supply design, monitoring and condition assesment	B-1
	Traffic and infrastructure sustainability and intermodality	C-1
13:00 - 13:15	Break	
13:15 - 14:30	Infrastructure planning, design, (re)construction and modernization	A-2
	Road superstructure design, monitoring and condition assesment	B-2
	Traffic management and monitoring	C-2
14:00 - 14:45	Break	
14:45 - 16:00	Rail structures design, monitoring and condition assesment	A-3
	Road superstructure innovation and sustainability	B-3
	Urban transport planning and modelling	C-3
16:00 - 16:15	Break	
16:15 - 17:30	Transport structures and substructures - Transport geotechnics	A-4
	Traffic integration and mobility	B-4
	Traffic sustainability and intermodality	C-4

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DAY 2		Friday, May 21st 2021	
09:00 - 10:30	Infrastructure management		A-5
	Road superstructure testing and modelling		B-5
	Traffic modelling, computer techniques and simulations, travel time and service quality		C-5
10:30 - 10:45	Break		
10:45 - 12:15	Rail superstructure modelling, design, optimization and maintenance		A-6
	Road superstructure testing and modelling		B-6
	Traffic modelling in urban areas		C-6
12:15 - 12:45	Break		
12:45 - 14:15	Road infrastructure design elements and modelling		A-7
	Transport structures and substructures - Bridges		B-7
	Traffic design and safety		C-7
14:15 - 14:30	Break		
14:30 - 15:00	Closing ceremony		A-CLC



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CONFERENCE PROGRAMME – DETAILED VERSION

DAY 1		
Thursday, May 20 th 2021		
10:00 - 10:20	Opening Ceremony	A-OPC
10:20 - 10:50	KEYNOTE LECTURE 1: ROAD CONNECTION TO SOUTH DALMATIA – PELJEŠAC BRIDGE AND ACCES ROADS by Dr. Goran Puž , Head of the Administration Office at Hrvatske Ceste d.o.o.	A-KEY
10:50 - 11:20	KEYNOTE LECTURE 2: TRACK & RAIL GEOMETRIC IRREGULARITIES, ASSET MANAGEMENT AND MAINTENANCE & RENEWAL COSTS by Prof. Stasha Jovanovic , Faculty of Technical Sciences, University of Novi Sad	A-KEY
11:20 - 11:30	GENERAL SPONSOR LECTURE by Dalibor Udovič , Monterra Ltd.	A-KEY
11:30 - 12:00	Break (30')	

Thursday, May 20 th 12:00 - 13:00		Session 1.A BUILDING INFORMATION MODELLING	
Chairmen		Prof. dr. Zlata Dolaček Alduk & Asst. Prof. dr. Saša Ahac	
Time	Subm.ID	Paper Title / Author(s)	
12:00 - 13:00	1326	IMPLEMENTATION OF BIM IN PUBLIC TRANSPORT INFRASTRUCTURE WORKS IN THE CZECH REPUBLIC WITH RESPECT TO THE FIDIC STANDARDS by Karel Fazekas , Ludvík Věbr , Jan Valentin & Petr Pánek	
	1240	BIM IMPLEMENTATION: ROUTE 6 PRISHTINE – HANI I ELEZIT by Dražen Strunje	
	1174	REAL-TIME MONITORING AND ANALYSES OF SENSORY DATA INTEGRATED INTO THE BIM PLATFORM by Stanislav Lenart , Veljko Janjić , Uroš Jovanović & Rok Vežočanik	
	1066	INFRASTRUCTURE PROJECTS AND BUILDING INFORMATION MODELLING IN BOSNIA AND HERZEGOVINA by Žaneta Ljevo , Mirza Pozder , Suada Džebo , Ammar Šarić & Sanjin Albinović	
13:00 - 13:15	Break (15')		

Thursday, May 20th
12:00 - 13:00

Session 1.B
RAIL VEHICLES AND POWER SUPPLY DESIGN,
MONITORING AND CONDITION ASSESMENT



Chairmen Prof. dr. Zdravko Schauerperl & Assoc. Prof. dr. Mladen Nikšić

Time	Subm. ID	Paper Title / Author(s)
12:00 - 13:00	1022	VEHICLE DESIGN – INFLUENCE ON OPERATIONAL QUALITY by Bernhard Rüger
	1102	STRAY CURRENT MEASUREMENT AT THE TRAMWAY INFRASTRUCTURE IN OSTRAVA, CZECH REPUBLIC by Katarina Vranešić, Václav Kolář, Stjepan Lakušić & Jiri Placek
	1045	STRATEGIC EVALUATION OF THE RAILWAY TRACTION ENERGY SUPPLY DEVELOPMENT ON THE HUNGARIAN RAILWAY NETWORK by Tibor Princz-Jakovics & Dóra Bachmann
	1011	DEVELOPMENT OF CONTACTLESS MEASUREMENT DEVICE FOR OVERHEAD CONTACT LINE by Itaru Matsumura, Kazuyoshi Nezu, Takuro Kawabata & Yusuke Watabe
13:00 - 13:15	Break (15')	

Thursday, May 20th
12:00 - 13:00

Session 1.C
TRAFFIC AND INFRASTRUCTURE SUSTAINABILITY
AND INTERMODALITY



Chairmen Assoc. Prof. dr. Hrvoje Haramina & Asst. Prof. dr. Maja Ahac

Time	Subm. ID	Paper Title / Author(s)
12:00 - 13:00	1073	COMPARATIVE ANALYSIS OF TAC ON RAILWAY FREIGHT CORRIDORS BETWEEN NORTH ADRIATIC PORTS AND ŽILINA by Denis Šipuš, Martina Ribarić, Borna Abramović & Sanjin Milinković
	1141	A BPMN MODEL OF RAIL PORT OPERATIONS TO EVALUATE POTENTIAL CAPACITY INCREASE by Dario Campagna, Caterina Caramuta, Giovanni Longo, Teresa Montrone & Carlo Poloni
	1043	PLANNING AND DESIGNING INFRASTRUCTURE AND SERVICES FOR SUSTAINABLE BICYCLE TOURISM ALONG THE EUROVELO ROUTES IN THE DANUBE REGION by Paul Pfaffenbichler, Joachim Gauster, Lukas Hartwig & Michael Meschik
	1175	IMPACT OF LIBERALIZATION ON THE TAXI MARKET IN THE REPUBLIC OF CROATIA by Marko Slavulj, Davor Brčić, Matija Sikirić & Božo Radulović
13:00 - 13:15	Break (15')	

Thursday, May 20 th 13:15 - 14:30		Session 2.A INFRASTRUCTURE PLANNING, DESIGN, (RE)CONSTRUCTION AND MODERNIZATION
Chairmen		Prof. dr. Tomislav Josip Mlinarić & Asst. Prof. dr. Maja Ahac
Time	Subm. ID	Paper Title / Author(s)
13:15 - 14:30	1302	SUMMARIZE OF DETAIL DESIGN FOR PELJEŠAC BRIDGE PROJECT IN CROATIA by Minghai Pei , Bicheng Tang , Chunrong Xu & Xuefeng Wang
	1075	RECONSTRUCTION AND MODERNIZATION OF RAILWAY LINE STALAČ – KRALJEVO - RUDNICA: OPTION ANALYSIS by Ljiljana Milić Marković & Ljubo Marković
	1224	REVIEW OF THE PROJECT OF RECONSTRUCTION OF THE EXISTING AND RECONSTRUCTION OF THE SECOND TRACK ON THE SECTION HRVATSKI LESKOVAC - KARLOVAC by Dražen Vinščak , Neven Popovački , Stjepan Kralj & Frane Burazer Iličić
	1227	POSSIBILITIES OF RAILWAY CONNECTION BETWEEN RIJEKA AND TRIESTE WITHIN THE EUROPEAN TEN-T NETWORK by Stjepan Kralj & Darko Šarić
	1226	KEY FEATURES OF THE PROJECT OF RAILWAY RECONSTRUCTION AND MODERNIZATION: SECTION ŠKRLJEVO-RIJEKA-ŠAPJANE by Stjepan Kralj & Frane Burazer Iličić
	1228	REVIEW OF THE REMETINEC ROUNDABOUT RECONSTRUCTION PROJECT IN ZAGREB by Stjepan Kralj & Nataša Mujčić Sukalić
14:30 - 14:45	Break (15')	

Thursday, May 20 th 13:15 - 14:30		Session 2.B ROAD SUPERSTRUCTURE DESIGN, MONITORING AND CONDITION ASSESMENT
Chairmen		Prof. dr. Tatjana Rukavina & Assoc. Prof. dr. Ivana Barišić
Time	Subm. ID	Paper Title / Author(s)
13:15 - 14:30	1126	THE DEVELOPMENT OF INTEGRATED ROAD CONDITION MONITORING SYSTEM FOR DEVELOPING COUNTRIES USING SMARTPHONE SENSORS AND DASHCAM IN VEHICLES by Hidekazu Fukai , Frederico Soares Cabral , Fernão A.L.N.Mouzinho , Vosco Pereira & Satoshi Tamura
	1013	GPR INVESTIGATION ON DAMAGED ROAD PAVEMENTS BUILT IN CUT AND FILL SECTIONS WITH RETAINING WALL by Sandro Colagrande , Danilo Ranalli , Marco Scozzafava & Marco Tallini
	1146	DEVELOPMENT OF AUTOMATIC ROAD WIDTH AND POTHOLE SIZE ESTIMATION METHOD FROM DASHCAM VIDEO FOR UNDER DEVELOPING COUNTRIES by Hidekazu Fukai , Fernão Mouzinho , Ryo Nagae & Masayuki Uchida
	1058	BINDER COURSES USING COLD RECYCLED MIXTURES – A NOVEL CONCEPT IN COLD RECYCLING by Bohdan Dotzycki , Andrea Grilli , Alex Balzi , Mariusz Jaczewski & Cezary Szydłowski
	1193	THE IMPLICATIONS OF CLIMATE CHANGE CONDITIONS IN THE PAVEMENT DESIGN by Dominika Hodáková , Andrea Zuzulová , Silvia Cápayová & Tibor Schlosser
	1005	UNSATURATED CBR DESIGN APPROACH OF FLEXIBLE PAVEMENT by Frank Aneke & Mohamed Hassan
14:30 - 14:45	Break (15')	

Thursday, May 20th
13:15 - 14:30

Session 2.C
TRAFFIC MANAGEMENT AND MONITORING



Chairmen Assoc. Prof. dr. Hrvoje Haramina & Asst. Prof. dr. Luka Novačko

Time	Subm. ID	Paper Title / Author(s)
13:15 - 14:30	1144	IMPACT ASSESSMENT OF COOPERATIVE INTELLIGENT SERVICES ON THE TEN-T ROAD NETWORK OF HUNGARY by Gabor Schuchmann & Dora Bachmann
	1168	THE ACCESSIBILITY OF RAIL TRANSPORT TO PEOPLE WITH REDUCED MOBILITY – CASE STUDY by Marjana Petrović , Matea Mikulčić & Tomislav Mlinarić
	1121	VEHICLE WHEEL LOAD ESTIMATION WITH FIBER OPTICAL CONTACT PATCH ELONGATION MEASUREMENT by Alex Coiret , Martin Fontaine , Julien Cesbron , Vincent Baltazar , David Betaille , Denis Coudouel & Etienne Léa
	1159	HIGHER AUTOMATION - METHODS TO INCREASE ENERGY EFFICIENCY IN RAILWAY OPERATION by Martina Zeiner , Matthias Landgraf , Martin Smoliner & Peter Veit
	1210	OVERVIEW OF EMERGING ROAD TRAFFIC DATA COLLECTION METHODS by Sandra Mihaljac , Maja Ahac , Saša Ahac & Miroslav Šimun
14:30 - 14:45	1320	DEPENDENCE OF DESIGN HOURLY VOLUME ON THE FUNCTION AND NATURE OF TRAFFIC DEMAND OF RURAL ROADS by Ivan Lovrić , Boris Čutura , Tiziana Campisi , Antonino Canale & Marko Renčelj
		Break (15')

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Thursday, May 20th
14:45 - 16:00

Session 3.A
RAIL STRUCTURES DESIGN, MONITORING
AND CONDITION ASSESMENT



Chairmen Prof. dr. Tomislav Josip Mlinarić & Asst. Prof. dr. Ivo Haladin

Time	Subm. ID	Paper Title / Author(s)
14:45 - 16:00	1105	DEVELOPMENT OF A CONTACTLESS SENSOR SYSTEM TO SUPPORT RAIL TRACK GEOMETRY ON-BOARD MONITORING by Marco Antognoli, Gintautas Bureika, Nadia Kaviani, Stefano Ricci, Luca Rizzetto & Viktor Skrickij
	995	COMPARATIVE RIDE COMFORT ANALYSIS OF IN-SERVICE TRAMS ON EXTREME ALIGNMENT CONFIGURATIONS USING SMARTPHONE-BASED SENSING by Ákos Vinkó
	1090	ASSESSMENT OF TRACK AND TURNOUT CONDITION BASED ON GEOMETRY MEASUREMENT AND RAILHEAD CONDITION DATA by Janusz Madejski
	1207	TRACK GAUGE MONITORING SCOPE OPTIMIZATION ON SMALL URBAN RAILWAY SYSTEMS by Igor Majstorović, Maja Ahac & Stjepan Lakušić
	1145	TRACK BED DESIGN AND EVALUATION METHODS by Otto Plášek, Petr Frantik & Nikola Svobodová
	1267	OPTIBOX - SOFTWARE TOOL FOR THE OPTIMAL DISTRIBUTION OF HOT BOX AXLE DETECTORS by Cecília Vale
16:00 - 16:15	Break (15')	

Thursday, May 20th
14:45 - 16:00

Session 3.B
ROAD SUPERSTRUCTURE INNOVATION AND SUSTAINABILITY



Chairmen Prof. dr. Tatjana Rukavina & Assoc. Prof. dr. Ivana Barišić

Time	Subm. ID	Paper Title / Author(s)
14:45 - 16:00	1164	PERFORMANCE OF CONCRETE MIXTURES CONTAINING MSWI BOTTOM ASH by Judita Gražulytė, Audrius Vaitkus, Alfredas Laurinavičius & Ovidijus Šernas
	1221	UTILIZATION OF GLASS WASTE IN VEHICLE RESTRAINT SYSTEMS by László Gáspár & Zsolt Bencze
	1229	USAGE OF NEW MATERIALS DURING REHABILITATION OF ROAD STRUCTURE USING COLD RECYCLING TECHNOLOGY by Kateryna Krayushkina, Tetiana Khymeryck & Kyrylo Fedorenko
	1271	RECYCLING CONSTRUCTION AND DEMOLITION WASTES WITHIN HYDRAULICALLY BOUND MIXTURES FOR ROAD PAVEMENTS by Marco Pasetto, Andrea Baliello, Giovanni Giacomello & Emiliano Pasquini
	1125	THE USE OF FIBERS IN CEMENT STABILIZED BASE COURSE OF PAVEMENT by Daniela Dumanić, Deana Breški & Sandra Juradin
	1138	WASTE RUBBER - SUSTAINABLE PAVEMENTS SOLUTION? by Martina Zagvozda, Matija Zvonarić, Marijana Cuculić & Ivana Pranjić
16:00 - 16:15	Break (15')	

Thursday, May 20th
14:45 - 16:00

Session 3.C
URBAN TRANSPORT PLANNING AND MODELLING



Chairmen Prof. dr. Zdravko Schauperl & Prof. dr. Darko Babić

Time	Subm. ID	Paper Title / Author(s)
14:45 - 16:00	1299	CHARGING POWER OPTIMISATION FOR ELECTRIC BUSES AT TERMINALS by Bálint Csonka
	1132	PREREQUISITES OF THE SUCCESSFUL TRAM-TRAIN SYSTEM AS A PART OF THE REGIONAL RAILWAY NETWORK by Stanislav Metelka & Vít Janoš
	1060	EVALUATION OF THE BASIC CHARACTERISTICS OF THE TRAFFIC FLOW BY MATHEMATICAL ANALYSIS by Kristián Čulík , Veronika Harantová & Alica Kalašová
	1061	THE ANALYSIS OF SOLUTIONS OF STATIC TRANSPORT IN THE SLOVAK REPUBLIC AND ABROAD by Alica Kalašová , Ambróz Hájnik & Stanislav Kubaľák
	1063	ANALYSIS OF ENERGY EFFICIENCY OF SUBURBAN RAILWAY TRANSPORT NETWORK by Aleksander Jakubowski , Krzysztof Karwowski & Andrzej Wilk
	1110	PREFERENCE FOR PUBLIC TRANSPORT VEHICLES IN SELECTED AREA OF PÚCHOV by Stanislav Kubaľák , Ambróz Hájnik & Veronika Harantová
16:00 - 16:15	Break (15')	

Thursday, May 20th
16:15 - 17:30

Session 4.A
TRANSPORT STRUCTURES AND SUBSTRUCTURES
– TRANSPORT GEOTECHNICS



Chairmen Prof. dr. Meho Saša Kovačević & Asst. Prof. dr. Mario Bačić

Time	Subm. ID	Paper Title / Author(s)
16:15 - 17:30	1106	SLOPE STABILISATION USING HIGH-TENSILE STAINLESS-STEEL WIRE MESH by Vjekoslav Budimir, Armin Roduner & Helene Hofmann
	1038	A NOVEL ALGORITHM FOR VERTICAL SOIL LAYERING BY UTILIZING THE CPT DATA by Meho Saša Kovačević, Mario Bačić, Lovorka Librić, Petra Žužul, Kenneth Gavin & Cormac Reale
	1235	CONCRETE CANVAS APPLICATION by Leo Malnar, Bruno Matjašič & Boris Kereš
	1050	METHODOLOGY OF GREEN RUNOFF DRAINAGE DESIGN FOR URBAN STREETS by Yuri Trofimenko, Dmitri Nemchinov, Natalia Evstigneeva, Aleksey Lobikov, Evstigneeva Yu.V
	1072	ROAD AND RAILWAY EMBANKMENTS AS FLOOD-CONTROL DIKES by Dragan Lukić, Elefterija Zlatanović, Nenad Milosavljević & Irena Basarić
	1025	PREDICTED AND MEASURED TIME-DEPENDENT BEHAVIOR OF HIGHWAY EMBANKMENT ON COHESIVE SOIL STRATUM by Juraj Chalmovský & Lumír Miča

Thursday, May 20th
16:15 - 17:30

Session 4.B
TRAFFIC INTEGRATION AND MOBILITY



Chairmen Assoc. Prof. dr. Mladen Nikšić & Asst. Prof. dr. Luka Novačko

Time	Subm. ID	Paper Title / Author(s)
16:15 - 17:30	1074	CHANGES IN TRAFFIC INFRASTRUCTURE WITH THE ARRIVAL OF AUTONOMOUS VEHICLES by Hrvoje Kmoniček & Filip Ruška
	1010	INTEGRATION INDEX FOR MOBILITY AS A SERVICE by Yinying He, Dávid Földes & Csaba Csiszár
	1031	PREDICTION OF FUTURE PASSENGER INTENSITY ASSIGNING IN THE DIRECTIONS AND TIME SLOTS by Petr Fridrišek & Vít Janoš
	1044	BICYCLE PARKING FOR OFFICE BUILDINGS IN FRANKFURT MAIN/GERMANY by Rudolf Eger
	1173	INCREASING CYCLIST MOBILITY BY IMPROVING CYCLING INFRASTRUCTURE: CASE STUDY KOPRIVNICA by Predrag Brlek, Ivan Cvitković, Goran Kos & Robert Gadanec
	1298	ALTERATION IN MODAL SHARE DUE TO AUTONOMOUS VEHICLE-BASED MOBILITY SERVICES by Dávid Földes & Csaba Csiszár

Thursday, May 20th
16:15 - 17:30

Session 4.C
TRAFFIC SUSTAINABILITY AND INTERMODALITY



Chairmen Prof. dr. Darko Babić & Dr. Dario Babić

Time	Subm. ID	Paper Title / Author(s)
16:15 - 17:30	1042	CARSHARING AS AN INTEGRATED MEAN OF TRANSPORTATION - A COHESIVE PLANNING APPROACH FROM THE CITY OF WIESBADEN, GERMANY by Maximilian Birk & Volker Blees
	1158	CAR-FREE TRAVEL TO HOLIDAY REGIONS - MEASURES TO STRENGTHEN THE RAILWAY by Bernhard Rüger, Markus Mailer & Bartosz Bursa
	1047	ELECTRO MOBILITY ACCEPTANCE: THE INFLUENCE OF POLITICAL BONUS AND MALUS FACTORS AND PREFERENCES FOR CHARGING STATIONS by Margarita Gutjar & Matthias Kowald
	1203	DISRUPTIVE CHANGES IN THE TRANSPORT SYSTEM - FROM CAR-REGIME TO SUSTAINABILITY by Harald Frey & Barbara Laa
	1079	OPTIMIZATION OF ROAD SPEED-SECTIONING BY ASSESSING THE IMPACT OF A ROAD SPEED LIMITATION SIGN by Pierre-Olivier Vandanjon, Alex Coiret & Emir Deljanin
	1033	INCLUSIVE MOBILITY – HOW TO TACKLE NEEDS AND CHALLENGES OF PERSONS WITH REDUCED MOBILITY by Darja Šemrov

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Friday, May 21st
9:00 - 10:30Session 5.A
INFRASTRUCTURE MANAGEMENT

Chairmen Prof. dr. Vesna Dragčević & Prof. dr. Zlata Dolaček Alduk

Time	Subm. ID	Paper Title / Author(s)
9:00 - 10:30	1034	FEATURES OF PUBLIC ROADS COST EVALUATION by Yuliia Bibyk & Olena Belska
	1069	CROATIAN ROAD SECTOR MANAGEMENT CHALLENGES by Ksenija Čulo , Vladimir Skendrović & Goran Puž
	1071	APPLICATION OF FIDIC GENERAL CONDITIONS IN TRANSPORT INFRASTRUCTURE PROJECTS IN CROATIA by Ksenija Čulo & Vladimir Skendrović
	1131	THE POTENTIAL FOR EVITA PROJECT E-KPIS TO BE USED BY ROAD AUTHORITIES by Darko Kokot
	1082	MODEL FOR ASSESSMENT OF EXTERNAL TRANSPORT COSTS by Zoran Krakutovski , Darko Moslavac , Darko Spiroski & Aleksandar Glavinov
	1278	COMBINING CAPITAL GRANT AND AVAILABILITY PAYMENT TO KEEP TOLL RATES AFFORDABLE by Cesar Queiroz & Goran Mladenović
	1272	CONCESSION AS ROAD INFRASTRUCTURE FINANCING MODEL IN BOSNIA AND HERZEGOVINA by Igor Pejić
10:30 - 10:45	Break (15')	

Friday, May 21 st 9:00 - 10:30		Session 5.B ROAD SUPERSTRUCTURE TESTING AND MODELLING	
Chairmen		Prof. dr. Aleksandra Deluka Tibljaš & Asst. Prof. dr. Ivica Stančerić	
Time	Subm. ID	Paper Title / Author(s)	
9:00 - 10:30	979	COMPARATIVE STUDY ON THE DESIGN METHODS FOR FLY ASH-FLEXIBLE PAVEMENT by Jacob Adedeji, Samuel Abejide & Mohamed Mostafa	
	1135	COMPARISON OF STANDARDS AND REQUIREMENTS FOR POROUS ASPHALT MIXTURES by Iva Brkić, Aleksandra Deluka-Tibljaš, Marijana Cuculić & Ivana Pranjić	
	1170	COMPARATIVE STUDY ON USING THERMOPLASTIC POLYMERS TO IMPROVE ASPHALT MIXTURES CHARACTERISTICS by Ciprian Tarta, Nicolae Ciont, Mihai Iliescu & Gavril Hoda	
	1323	A REVIEW OF THE BEST EXPERIENCE ON CRUMB RUBBER – DRY PROCESS MODIFIED ASPHALT MIXTURE PERFORMANCE by Ovidijus Šernas, Audrius Vaitkus & Deimantė Kilaitė	
	1123	ASPHALT CONCRETE MIXTURES WITH ADDITION OF RECLAIMED ASPHALT PAVEMENTS by Piotr Zieliński	
	1248	BEHAVIOR OF HIGH-MODULUS ASPHALT MIXTURES FROM THE PERSPECTIVE OF DEFORMATION CHARACTERISTICS (STIFFNESS) by Jan Valentin, Adriana Kotoušová & Majda Belhaj	
10:30 - 10:45	Break (15')		

Friday, May 21 st 9:00 - 10:30		Session 5.C TRAFFIC MODELLING, COMPUTER TECHNIQUES AND SIMULATIONS, TRAVEL TIME AND SERVICE QUALITY	
Chairmen		Prof. dr. Irena Ištoka Otković & Asst. Prof. dr. Maja Ahac	
Time	Subm. ID	Paper Title / Author(s)	
9:00 - 10:30	1017	SELECTION AND ANALYSIS OF INPUT PARAMETERS INFLUENCING PEDESTRIAN MICRO-SIMULATED CROSSING TIME by Chiara Gruden, Irena Ištoka Otković & Matjaž Šraml	
	1179	THE ARCHITECTURE OF DECISION-MAKING SUPPORT SYSTEMS USED FOR THE RATIONAL RAILWAY CAPACITY MANAGEMENT by Ivica Ljubaj, Tomislav Josip Mlinarić, Slavko Vesković & Dušan Jeremić	
	982	ENHANCING CAPACITY ON ETCS LEVEL 2 LINES IN AUSTRIA by Andreas Schöbel & Olga Permiakova	
	1078	MOTORWAY WORK ZONES CAPACITY ESTIMATION USING FIELD DATA FROM SLOVENIA by Luka Trček, Darja Šemrov & Irena Strnad	
	1218	UNCERTAINTY ESTIMATION ON ROAD SAFETY ANALYSIS USING BAYESIAN DEEP NEURAL NETWORKS by Guanyuan Pan, Chen Qili, Fu Liping, Yu Ming & Muresan Matthew	
	1081	SIMULATION OF ROAD SPEED-SECTIONING BY ASSESSING THE IMPACT OF TRAFFIC AND ROAD INFRASTRUCTURE by Emir Deljanin, Alex Coiret & Pierre-Olivier Vandanjon	
10:30 - 10:45	Break (15')		

Friday, May 21 st 10:45 - 12:15		Session 6.A RAIL SUPERSTRUCTURE MODELLING, DESIGN, OPTIMIZATION AND MAINTENANCE
Chairmen		Asst. Prof. dr. Marko Bartolac & Asst. Prof. dr. Ivo Haladin
Time	Subm. ID	Paper Title / Author(s)
10:45 - 12:15	1120	BALLAST CONDITION EVALUATION DURING TAMPING ACTIONS by Stefan Offenbacher , Matthias Landgraf & Bernhard Antony
	1008	APPLICATION OF THE BEZGIN METHOD TO ESTIMATE DYNAMIC IMPACT FORCES AND JUDGE THE CONDITIONS FOR BALLAST PULVERIZATION AND SLAB CRACKING DUE TO ABRUPT AND RAPID CHANGES IN RAILWAY TRACK PROFILE by Erdem Balci & Niyazi Özgür Bezin
	989	A DISCUSSION FOR THE REDUCTION IN THE LENGTH OF A PRESTRESSED CONCRETE RAILWAY TIE IN TIME by Niyazi Özgür Bezin
	1181	DURABILITY OF REINFORCED-CONCRETE TRACK SLEEPERS by Ivan Zovkić
	1180	POSSIBILITY OF APPLICATION OF CONCRETE SLEEPER WITH UNDER SLEEPERS PADS by Zvonko Perčin
	991	CALCULATION OF THE TEMPERATURE DISTRIBUTION IN HEATED SWITCH POINTS by Markus Schladitz , Robert Adam & Steffen Großmann
	984	DEVELOPMENT OF THE NEW “DIV” RAIL FASTENING SYSTEM by Stjepan Lakušić , Ivo Haladin , Mate Ivančev , Maja Baniček & Janko Koščak
12:15 - 12:45	Break (30')	

Friday, May 21 st 10:45 - 12:15		Session 6.B ROAD SUPERSTRUCTURE TESTING AND MODELLING
Chairmen		Prof. dr. Aleksandra Deluka Tibljaš & Asst. Prof. dr. Ivica Stančerić
Time	Subm. ID	Paper Title / Author(s)
10:45 - 12:15	1016	USAGE OF WOOD ASH IN STABILIZATION OF UNBOUND PAVEMENT LAYERS by Sanja Dimter , Martina Zagvozda , Branimir Milovanović & Miroslav Šimun
	1032	THERMO – MECHANICAL MODEL OF CONCRETE PAVEMENT IN HARDENING PHASIS by Jakub Veselý , Petr Pánek & Ludvík Vébr
	1223	FINITE ELEMENT SIMULATION AND MULTI-FACTOR STRESS PREDICTION MODEL FOR CEMENT CONCRETE PAVEMENT CONSIDERING VOID UNDER SLAB by Bangyi Liu & Huang Ming
	1057	PERFORMANCE ANALYSIS OF FLEXIBLE PAVEMENTS WITH BASE LIME by Mena Souliman & Nitish Bastola
	1086	QUALITY CHECKING OF POLYMER MODIFIED BITUMENS IN SLOVENIA by Marjan Tušar , Lidija Ržek & Mojca Turk
	1246	POTENTIAL SUBSTITUTIONS OF TRADITIONAL HYDRAULIC BINDERS IN COLD RECYCLED MIXTURES USING BLAST FURNACE SLAG by Jan Valentin , Pavla Vacková , Nadia Tarifa & Dimitra Giannaka
	1006	RESILIENT PERFORMANCE OF EXPANSIVE SUBGRADES STABILIZED WITH NANOSIZED AND ACTIVATED FLY ASH by Frank Aneke & Mohamed Hassan
12:15 - 12:45	Break (30')	

Friday, May 21 st 10:45 - 12:15		Session 6.C TRAFFIC MODELLING IN URBAN AREAS
Chairmen		Prof. dr. Irena Ištoka Otković & Asst. Prof. dr. Marko Šošarić
Time	Subm. ID	Paper Title / Author(s)
10:45 - 12:15	1150	POPULATION SYNTHESIS IN ACTIVITY-BASED TRAVEL DEMAND by Ljupko Šimunović, Mario Ćosić, Dino Šojat & Julijan Jurak
	1052	APPLICATION OF TRAFFIC SIMULATION MODELS FOR URBAN ROAD NETWORK ANALYSES – CASE STUDIES FROM RIJEKA CITY by Aleksandra Deluka-Tibljaš, Ivan Klasić, Sanja Šurdonja & Irena Ištoka Otković
	996	THE IMPACT OF DIFFERENT SATURATION HEADWAY VALUES ON INTERSECTION CAPACITY by Dražen Cvitanić & Biljana Maljković
	1001	THE EFFECT OF THE TRAFFIC COMPOSITION ON THE URBAN TRAFFIC CAPACITY. PASSENGER CAR EQUIVALENT COEFFICIENTS by Dmitri Nemchinov, Dmitri Martiakhin, Pavel Pospelov, Tatiana Komarova & Alexandr Mikhailov
	1012	U-TURN CAPACITY AT SIGNALIZED INTERSECTIONS by Dmitri Martiakhin, Tatiana Komarova, Dmitri Nemchinov & Alexandr Mikhailov
	1026	IMPROVED APPLICABILITY DIAGRAM OF TWO-LANE ROUNDABOUTS by Ammar Sarić, Sanjin Albinović, Mirza Pozder, Suada Džebo, Žaneta Ljevo & Emira Muftić
12:15 - 12:45	Break (30')	

Friday, May 21 st 12:45 - 14:15		Session 7.A ROAD INFRASTRUCTURE DESIGN ELEMENTS AND MODELLING
Chairmen		Prof. dr. Vesna Dragčević & Željko Stepan
Time	Subm. ID	Paper Title / Author(s)
12:45 - 14:15	983	ROAD WIDENING IN CURVES ACCORDING TO THE CROATIAN REGULATIONS, GERMAN GUIDELINES AND THE COMPUTER SIMULATION OF VEHICLE MOVEMENT by Ivica Stančerić, Iris Tomić, Šime Bezina & Tamara Džambas
	1154	THE SPEED FACTOR IN SWEEPED PATH ANALYSIS by Andromachi Gkoutzini, Panagiotis Lemonakis, George Kaliabetos & Nikolaos Eliou
	1309	RISK RANKING ON EXISTING TWO-LANE RURAL ROADS WITH RESPECT TO ALIGNMENT AND AT GRADE INTERSECTIONS by Vassilios Matragos, Stergios Mavromatis, Konstantinos Apostoleris & Basil Psarianos
	1331	RELIABILITY OF VEHICLE MOVEMENT SIMULATION RESULTS IN ROUNDABOUT DESIGN PROCEDURE BASED ON THE RULES OF DESIGN VEHICLE MOVEMENT GEOMETRY by Tamara Džambas, Vesna Dragčević, Šime Bezina & Marijan Grgić
	1187	MILITARY ROAD INTERPOLATION INTO PUBLIC ROADS NETWORK IN CONDITIONS OF NATURAL DISASTER by Tihomir Tandarić, Peko Nikolić & Vesna Dragčević
	1260	DESIGN OF MEDIAN ENDS AT AT-GRADE INTERSECTION LAYOUT PLANS by Vladan Ilić, Filip Trpčevski, Dejan Gavran, Sanja Fric, Stefan Vranjevac & Miloš Lukić
14:15 - 14:30	Break (15')	

Friday, May 21st
12:45 - 14:15

Session 7.B
TRANSPORT STRUCTURES AND SUBSTRUCTURES - BRIDGES



Chairmen Assoc. Prof. dr. Domagoj Damjanović & Asst. Prof. dr. Anđelko Vlašić

Time	Subm. ID	Paper Title / Author(s)
12:45 - 14:15	1092	STEEL PILES DRIVING PROCEDURE AND RESULT ANALYSIS OF EXTRADOSED BRIDGE MAINLAND - PELJEŠAC by Bicheng Tang, Dong Zhang, Xuefeng Wang & Fei Zhang
	1204	EXTRA-LONG STEEL PILES PRODUCTION AND TRANSPORT OF BRIDGE MAINLAND – PELJEŠAC, CROATIA by Bicheng Tang, Cong Zhu, Linghua Zeng & Hao Liu
	1059	STUDY OF FILMING CONDITION FOR DEEP LEARNING BASED CRACK DETECTION METHOD by Tomotaka Fukuoka, Takahiro Minami, Makoto Fujiu & Junichi Takayama
	1196	EVOLUTION OF BRIDGES WITH STEEL-CONCRETE COMPOSITE SUPERSTRUCTURE. WHAT COMES NEXT? by Ciprian Farcas
	1212	A MODEL FOR ASSESSING THE PRIORITY OF THE BRIDGES WITHIN THEIR REPAIR STRATEGY by Larysa Bodnar & Alexander Kanin
	1292	DEVELOPMENT OF NEW BRIDGE INSPECTION SYSTEM USING 5G AND AI UNDER CLOUD CONDITION by Mai Yoshikura, Takahiro Minami, Tomotaka Fukuoka, Makoto Fujiu, Junichi Takayama, Kazuhiko Hashi, Tetsuya Nakano, Yuusuke Shimazaki & Takuro Komura
	1083	GEOTECHNICAL ULS DESIGN ISSUES OF BRIDGE SHALLOW FOUNDATIONS by Konstantina Papadopoulou & George Gazetas
14:15 - 14:30	Break (15')	

MEDIA PARTNERS

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Friday, May 21st
12:45 - 14:15

Session 7.C
TRAFFIC DESIGN AND SAFETY



Chairmen Assoc. Prof. dr. Danijela Barić & Asst. Prof. dr. Saša Ahac

Time	Subm. ID	Paper Title / Author(s)
12:45 - 14:15	1030	INCREASING LEVEL CROSSING SAFETY IN URBAN AREAS - CASE STUDY CITY OF ZAGREB by <i>Martin Starčević, Danijela Barić & Ivan Broz</i>
	1067	NEW METHOD OF PREDICTING THE OCCURRENCE OF ROAD ACCIDENTS IN UKRAINE by <i>Valerii Vyrozhemskyi, Liudmyla Nahrebelna, Minenko Yevhen & Nataliia Bidnenko</i>
	1291	RESEARCH ON RELATIONSHIP BETWEEN COGNITIVE IMPAIRMENT AND DRIVING BEHAVIOR OF STARTING/STOPPING FOR ELDERLY DRIVER by <i>Yuta Arakawa, Kota Miyauchi, Kazuyuki Takada, Moeko Shinohara & Makoto Fujiu</i>
	1167	VEHICLE MISMATCH – A CASE STUDY by <i>Roman Mikulec, Pavlína Moravcova, Kateřina Bucsuházy, Martina Kostíková & Jakub Motl</i>
	1247	A STUDY OF ACTUAL AND POSTED SPEED ON SOME NIGERIAN ROADS by <i>Site Onyejekwe, Nasiru Rabi, Abubakar Hammeed & Olusegun Osunlalu</i>
14:15 - 14:30	1211	MULTICRITERIA EVALUATION OF DANGEROUS SECTIONS FROM THE OCCURRENCE OF WILDLIFE ON STATE ROADS OF LIKA-SENJ COUNTY USING THE AHP METHOD by <i>Joso Vrkljan, Josip Burazer Pavešković, Danijela Barić & Miljenko Mustapić</i>
	1051	METHODOLOGY FOR TUNNEL RISK ASSESSMENT USING FAULT AND EVENT TREE ANALYSIS by <i>Zlatko Zafirovski, Vasko Gacevski, Zoran Krakutovski, Slobodan Ognjenovic & Ivona Nedevska</i>
14:30 - 15:00	Break (15')	
14:30 - 15:00	Closing ceremony	A-CLC

Proceedings of the

6th International Conference on Road and Rail Infrastructure – CETRA 2020*

20–21 May 2021, Zagreb, Croatia

**INFRASTRUCTURE AND TRAFFIC:
PLANNING, (RE)CONSTRUCTION AND
MANAGEMENT**

**TRANSPORT STRUCTURES AND
SUBSTRUCTURES: MODELLING,
DESIGN AND MONITORING**

TRAFFIC: PLANNING AND MODELLING

**INFRASTRUCTURE AND VEHICLES:
DESIGN, MODELLING, MONITORING
AND CONDITION ASSESMENT**

**SUPESTRUCTURE: DESIGN,
MODELLING, OPTIMIZATION,
MONITORING AND CONDITION
ASSESMENT**

**TRAFFIC: MANAGEMENT,
MONITORING, INTEGRATION AND
MOBILITY**

**ROAD SUPERSTRUCTURE:
INNOVATION AND SUSTAINABILITY**

**TRAFFIC: SUSTAINABILITY AND
INTERMODALITY**

**ROAD SUPERSTRUCTURE: TESTING
AND MODELLING**

**TRAFFIC: SIMULATIONS, COMPUTER
TECHNIQUES, TRAVEL TIME AND
SERVICE QUALITY**

