

9th International Conference on Road and Rail Infrastructure CETRA 2026
27 - 30 May 2026, Bol, island Brač, Croatia
Conference Programme

Day 1 - Wednesday - 27th May

17:00 - 20:00 Hotel Lobby - Registration of the Participants

20:00 - 21:00 Hotel Terrace - A Welcome Cocktail for Participants and Guests

Day 2 - Thursday - 28th May

08:00 - 09:00 Hotel Lobby - Registration of the Participants

09:00 - 10:00 Hall A - Opening Ceremony

10:00 - 10:30 Hall A - Keynote Lecture DIGITISATION OF DIAGNOSTICS FOR CRITICAL PARTS OF THE TRACK SUPERSTRUCTURE by Assoc. Prof. Otto Plášek

10:30 - 11:00 Coffee Break

11:00 - 12:30 Hall A - Plenary session

11:00 - 11:30 Keynote Lecture DATA-DRIVEN BRIDGE ANALYSIS USING TRAFFIC LOAD MEASUREMENTS by Prof. Aleš Žnidarič

11:30 - 12:00 Keynote Lecture ADVANCED METHODOLOGIES AND DATA COLLECTION TECHNIQUES IN URBAN TRAFFIC DYNAMIC NOISE MODELING by Prof. Gaetano Licitra

12:00 - 12:30 Keynote Lecture TOWARD SUSTAINABLE AND RESILIENT ROADWAY INFRASTRUCTURE by Prof. Hao Wang

12:30 - 14:00 Lunch Break

14:00 - 15:30 Session 1

ID Submission by Authors

Hall A, Session 1

Strategic and Sustainable Rail Infrastructure: Planning, Design, (Re)construction, and Management

Moderators: **Maja Ahac & Stefano Ricci**

- 2065 RECONSTRUCTION OF THE LJUBLJANA RAILWAY STATION – DESIGN AND IMPLEMENTATION
L. Šošo, J. Raspor & A. Mandić (30' Invited Lecture)
- 1822 COMPLEX LARGE-SCALE INFRASTRUCTURE DEVELOPMENT IN BUDAPEST: NEW TRAM LINE BETWEEN DISTRICTS INCLUDING AN INTERMODAL JUNCTION AT RÁKOSRENDEZŐ
T. Marczingós, G. Pál & G. Dávid
- 1935 CASH FLOW MONITORING DURING THE CONSTRUCTION OF INFRASTRUCTURE PROJECTS
E. Gashi, R. Kijak & Y. Binaku
- 1827 A METHODOLOGY FOR TASK IDENTIFICATION AND SELECTION FOR THE OPTIMIZATION OF INVESTMENTS IN RAILWAY NETWORKS
P. Franke-Wasowski & M. Jacyna
- 1993 THE ROLE OF DESIGNATED BODIES IN RAILWAY INFRASTRUCTURE AUTHORISATION
B. Belinić, S. Seražin Korper & M. Vajdić
- 1943 UNDER SLEEPER PADS AND UNDER BALLAST MATS: ENHANCING RAILWAY SUPERSTRUCTURE PERFORMANCE
Lukas Kaiser
- 1809 RAIL INNOVATION AND GREEN STEELMAKING FOR TOMORROW'S SUSTAINABLE MOBILITY
S. Baltić

Hall B, Session 1

Special Session: Sustainable and Resilient Pavements (Part 1)

Moderators: **Josipa Domitrović & Miomir Mijlković**

- 2107 UNDERSTANDING THE RESILIENCE OF ASPHALT THROUGH ITS INTERNAL STRUCTURE
M. Mijlković (30' Keynote Lecture)
- 1779 USE OF RECYCLED WALL CERAMIC WASTE IN BITUMINOUS MIXTURES
M. Karacasu, H. Koca, M. Šimun & D. Marković
- 1865 LABORATORY AND ENVIRONMENTAL ASSESSMENT OF WARM ASPHALT MIXTURES MODIFIED WITH PLASTIC WASTE
V. Scaramucci, G. Ferrotti, A. Graziani, A. Grilli & F. Cardone
- 1968 EVALUATION OF THE METHODS FOR DETERMINING MIXING AND COMPACTION TEMPERATURES OF MODIFIED BITUMEN
L. Ržek & M. Mijlković
- 2039 CONTRIBUTION TO THE RESEARCH ON THE POSSIBLE APPLICATION OF HEAT ENERGY RECOVERY IN THE AGGREGATE PREPARATION PROCESS IN THE PRODUCTION OF ASPHALT MIXTURES
Z. Cimbola, Z. Dolaček-Alduk & S. Dimter
- 2046 ENHANCEMENT AND UPGRADE OF POLYMER MODIFIED BITUMEN FOR DURABLE ASPHALT PAVEMENT: „MULTIFUNCTIONAL ADDITIVE“ – A NEW APPROACH
O. Fleischel & W. Schatz
- 2101 ACOUSTIC PERFORMANCE AND DURABILITY OF LOW-NOISE STONE MATRIX ASPHALT (SMA8 LA) WEARING COURSE
R. Pacholak & W. Gardziejczyk

Hall C, Session 1

Urban Traffic Systems: Modelling Operational Performance

Moderators: **Danijela Barić & Ivica Stančerić**

- 1757 ANALYSIS OF TRAFFIC PATTERNS AND INTERSECTION PERFORMANCE AT RETAIL FACILITY ACCESS POINTS
A. Deluka-Tibljaš, S. Šurdonja & L. Milosavijević
- 1759 URBAN ROUNDABOUTS NEAR SIGNALISED INTERSECTIONS: REVIEW AND PRELIMINARY MICROSIMULATION FINDINGS
M. Klobučar, A. Deluka-Tibljaš, S. Šurdonja, I. Ištoka Otković & M. Cuculić
- 1781 SATURATION FLOW RATE ESTIMATION METHODS AT SIGNALIZED INTERSECTIONS
S. Vrdoljak, D. Cvitanić & B. Maljković
- 2072 GNSS-BASED TRAM SPEED PROFILE MODELLING: A CASE STUDY OF THE ZAGREB TRAM NETWORK
I. Majstorović, M. Ahac & I. Haladin
- 1747 EFFICIENT PARKING – SHARED USE OF PRIVATE PARKING SPACES AS A DRIVER FOR SUSTAINABLE RESIDENTIAL NEIGHBOURHOODS
C. Hintz & V. Bleeß
- 1782 KEY ELEMENTS FOR THE IMPLEMENTATION OF A MOBILITY CONCEPT FOR INNER-CITY PROJECTS
R. Eger
- 1790 APPLICATION OF MICROSIMULATIONS IN ASSESSING THE IMPACT OF A GARAGE ON THE FUNCTIONAL AND SAFETY CHARACTERISTICS OF AN INTERSECTION
I. Ištoka Otković, K. Lisko, A. Deluka-Tibljaš, S. Šurdonja & M. Klobučar
- 1953 MATERIAL INFLUENCE ON THE PERFORMANCE APPEARANCES OF PASSIVELY SAFE POLES
V. Tkalčević Lakušić & K. Vranešić
- 1913 MODELING THE FACTORS INFLUENCING METRO & BIKE-SHARING INTEGRATION: A CASE STUDY FROM IZMIR
E. Odabasi, Y. Alver, P. Onelcin, T. Taner & B. Özdemir

15:30 - 16:00 Coffee Break

Hall A, Session 2

Railway Transport: Capacity,
Operations, and Performance
Management

Moderators: **Maja Ahac & Marjana
Petrović**

- 1812 CANCEL-RUN FRONTIERS FOR DELAYED TRAINS UNDER RAILWAY PERFORMANCE REGIMES
P. Asmari & S. Ricci
- 1833 CAPACITY ANALYSIS OF BOLOGNA CENTRALE RAILWAY NODE BASED ON PUBLIC INFRASTRUCTURAL AND OPERATIONAL DATA
C. Musetti
- 1754 DELAY TRENDS IN RAIL FREIGHT TRANSPORT DUE TO TEMPORARY UNAVAILABILITY OF INFRASTRUCTURE
P. Umedi
- 1852 DEVELOPMENT AND PRACTICAL APPLICATION OF THE HIGHEST TRAIN TRAFFIC DIAGRAM LEVEL IN RAILWAY PASSENGER TRANSPORT
M. Dedik, Z. Bulková, J. Gašparik, L. Pečený & M. Buc
- 1805 RELEVANT SERVICES FOR STRENGTHENING INTERMODAL TRAVEL CHAINS RAIL-AIR TRAVEL
B. Rüger & J. Herbst
- 1808 INFORMATION SYSTEMS FOR PASSENGERS IN RAILWAY PASSENGER TRANSPORT IN THE SLOVAK REPUBLIC
M. Šmajda, V. Zitrický, E. Brumerčíková & J. Mašek
- 1917 MITIGATING TRAM BUNCHING AND ENHANCING HEADWAY UNIFORMITY USING AN INNOVATIVE SERVICE: A SIMULATION-BASED CASE STUDY IN ZAGREB
H. Haramina, J. Blašković Zavada, M. Slavulj & A. Wagner

Hall B, Session 2

Special Session: Sustainable and
Resilient Pavements (Part 2)

Moderators: **Josipa Domitrović &
Miomir Miljković**

- 2097 **CIRCULAR ECONOMY CONCEPTUAL FRAMEWORK FOR ROADWAY INFRASTRUCTURE: SIGNIFICANCE OF RESEARCH-TO-PRACTICE**
K. P. Biligiri (30' Keynote Lecture)
- 1775 VALIDATION OF PAVEMENT CONDITION EVALUATION BY USING MOBILE MAPPING SYSTEM
D. Koch
- 1786 EVALUATION OF PAVEMENT STRUCTURAL CONDITION USING FWD AND TSD MEASUREMENTS
A. Rudeš, Š. Bezina, L. Krnić & T. Rukavina
- 1789 APPLICATIONS OF UNMANNED AERIAL VEHICLES IN PAVEMENT ENGINEERING: RECENT ADVANCES AND CHALLENGES
Š. Bezina, A. Rudeš, J. Domitrović, I. Stančerić, M. Grgić & T. Rukavina
- 1804 NEW CONDITION INDICATOR FOR SIDEWALK MAINTENANCE MANAGEMENT
C. Van Geem
- 2062 NON-INTRUSIVE ROAD CONDITION DATA COLLECTION FOR POWERED TWO-WHEELERS: A CROATIAN CASE STUDY
D. Babić, D. Babić, M. Fiolić, A. Hula, R. Spielhofer, I. Erdelean, M. Ševrović, P. Saleh, C. Fürstler, G. Bauer & M. Hahn

Hall C, Session 2

Traffic Noise and Vibroacoustics:
Measurement, Modelling, and Mitigation

Moderators: **Saša Ahac & Tamara
Džambas**

- 2108 RUCONBAIR - INTEGRATED AIR AND NOISE POLLUTION REDUCTION SOLUTION FOR URBAN ROAD INFRASTRUCTURE
Beton Lučko (Sponsor Lecture)
- 1909 ADVANCING IN-SITU NOISE BARRIER TESTING: INSIGHTS FROM INTERNATIONAL INTER-LABORATORY STUDIES
A. Fuchs & M. Haider
- 1987 MICRO ROUNDABOUTS AS A ROAD TRAFFIC NOISE MITIGATION MEASURE
S. Ahac, M. Ahac & D. Burkovac
- 2013 AN ITS SYSTEM FOR MITIGATING NOISE INDUCED BY PORT-RELATED ROAD TRAFFIC
G. Licitra, M. Bolognese, M. Cerchiai, D. Palazzuoli, A. Panci, A. L. Montenegro & D. Vatteroni
- 2102 VEHICLE/ROAD NOISE AS ONE OF THE FACTORS DETERMINING THE LEVEL OF TRAFFIC NOISE IN THE VICINITY OF ROADS
M. Marek & G. Władysław
- 1912 REGRESSION ANALYSIS OF TRAIN OPERATING PARAMETERS INFLUENCING RAILWAY NOISE EMISSION BASED ON FIELD MEASUREMENTS
M. Wrótny
- 2103 THE EFFECT OF RAIL GRINDING AND RAIL CORRUGATION ON TRAMWAY TRACK NOISE AND VIBRATION LEVELS
I. Haladin, D. Medvedić & K. Burnać

Day 3 - Friday - 29th May

09:00 - 10:30 Session 3

ID Submission by Authors

Hall A, Session 3

Resilient Transport Infrastructure: Road and Rail Systems

Moderators: **Saša Ahac & Gaetano Licitra**

- 1749 VULNERABILITY ASSESSMENT FRAMEWORK FOR CLIMATE RESILIENT ROADS NETWORK IN ETHEKWINI MUNICIPALITY, KWAZULU-NATAL
P. Chetty & M. Mostafa
- 1930 THE INFLUENCE OF TEMPERATURE ON STEEL PERFORMANCE IN RISK MITIGATION SYSTEMS
R. Luis-Fonseca, A. Roduner, M. Boričević & V. Budimir
- 1988 ENHANCING OPERATIONAL EFFICIENCY OF CHINA-EUROPE FREIGHT TRAIN SERVICE: A CASE STUDY OF XI'AN TERMINAL
Y. Sun & D. Tomanek
- 2003 IMPACT OF ROAD NETWORK CHANGES ON TRANSPORTATION ACCESSIBILITY BEFORE AND AFTER THE 2024 NOTO PENINSULA EARTHQUAKE
R. Arai, K. Takada, M. Fujju, Y. Morisaki & J. Takayama
- 1806 IMPACT OF ENVIRONMENTAL CONDITIONS ON STRAY CURRENT IN URBAN TRACK SYSTEMS
K. Vranešić & I. Haladin
- 1826 DECARBONIZATION POSSIBILITIES FOR TECHNICALLY DEMANDING NON-ELECTRIFIED RAILWAY LINES: A CASE STUDY OF THE SLOVAK REPUBLIC
P. Morihladko & A. Dolinayová
- 2110 CONSTRUCTION OF A NEW TRAMWAY LINE IN SARAJEVSKA STREET IN ZAGREB USING A NOVEL TYPE OF SLAB TRACK SYSTEM
D. Badovinac & I. Haladin

Hall B, Session 3

Special Session: Advanced Assessment and Monitoring of Bridges (Part 1)

Moderators: **Aleš Žnidarič, Anđelko Vlašić & Ivan Duvnjak**

- 1765 THE NEXT GENERATION OF BRIDGE GIRDERS AND BRIDGE ELEMENTS
Z. Bencze & G. Kardos
- 1770 EXPERIMENTAL AND OPERATIONAL MODAL ANALYSIS ESTIMATION OF DAMPING RATIOS FOR STAYS OF A BRIDGE UNDER CONSTRUCTION
R. Gomez, M. Mendoza, R. Sanchez, M. Arenas & O. Rosales
- 1828 COMPARATIVE ANALYSIS OF DESIGN PARAMETERS FOR EQUESTRIAN BRIDGES
I. Štimac Grandić & A. Bjelanović
- 1896 ROBUST AI-BASED DRIVE-BY DAMAGE DETECTION FOR RAILWAY BRIDGES UNDER OPERATIONAL AND ENVIRONMENTAL VARIATIONS
C. Bragança, E. Souza, I. Ames, D. Ribeiro & T. Bittencourt
- 1911 SEISMIC RETROFITTING OF THE GROMOVI BRIDGE IN SISAK
M. Skazlić, S. Lavrnjić, Ž. Skazlić, M. Vujica & K. Panadić
- 1964 IMPACT OF FLOODING ON BRIDGE CONDITION: INSIGHTS FROM TWO CASE STUDIES
M. Kušter Marić, T. Rinkovec, P. Uremović & M. Srbić
- 1834 HYBRID PRECAST-CAST-IN-PLACE METHODOLOGY FOR ACCELERATED PIER TABLE CONSTRUCTION IN EXTRADOSED BRIDGES
Jaganath B., S. Cyriac, Rajalakshmi M & I. Choi

Hall C, Session 3

Rail Superstructure: Monitoring, Condition Assessment, and Predictive Maintenance

Moderators: **Otto Plašek & Stefano Ricci**

- 1846 AI-DRIVEN PREDICTIVE OPTIMIZATION FRAMEWORK FOR RAILWAY INFRASTRUCTURE MAINTENANCE
D. Henríquez Flores & Z. Grande Andrade
- 1854 ARTIFICIAL INTELLIGENCE TECHNIQUES FOR FORECASTING RAILWAY TRACK PROFILE: LEIXÕES LINE CASE STUDY
M. Mokhtari, C. Vale, M. Lurdes Simões & A. Mosleh
- 1871 AI-ENHANCED CONDITION-BASED MAINTENANCE FRAMEWORK FOR NRPCES - NEW REPLACEMENT POLICY CONSIDERING ENVIRONMENTAL SUSTAINABILITY PROJECT
A. Mosleh, C. Vale, M. Mokhtari, P. Mansouri, V. Gonçalves, M. Mohammadi, A. Gul Majidi, C. Santos, L. das Neves, E. Carvalho, P. Rosa-Santos & F. Taveira-Pinto
- 1755 FROM TRACK GEOMETRY TO SUBSOIL: A SIGNAL PROCESSING APPROACH TO SUBSTRUCTURE CONDITION ASSESSMENT
T. Koch
- 1758 DEMONSTRATION OF A NOVEL NON DESTRUCTIVE TESTING METHOD FOR MN-13 TURNOUT FROGS IN TRACK
S. Eck
- 1955 QUANTIFICATION AND ASSESSMENT OF SHORT-WAVE RAIL CORRUGATION
G. Riepl
- 1874 COMPARATIVE ANALYSIS OF STANDARDIZED AND COUNTRY-SPECIFIC METHODS FOR CALCULATING THE TRACK QUALITY INDEX (TQI)
Z. Orban, D. Gusa, C. Cojocar, M. Gocica & G. Kollo
- 1886 A DUAL-LEVEL DATA PROCESSING FRAMEWORK FOR CONDITION-BASED RAILWAY MAINTENANCE: INTEGRATING AUTONOMOUS FLEET INSPECTION AND ADVANCED PROGNOSTICS
J. Madejski
- 2004 EXTENSION OF RAIL REPLACEMENT CYCLE USING RAIL HEALTH INDEX REFLECTED ONBOARD TRAIN DANA
M. Hosoda & T. Deshimaru

10:30 - 11:00 Coffee Break

11:00 - 12:30 Session 4

ID Submission by Authors

Hall A, Session 4 Transport Infrastructure: Policy, Planning, and Digital Transformation Moderators: Saša Ahac & Sanja Fric	2105	NEW GENERAL TECHNICAL CONDITIONS FOR ROAD WORKS (OTU 2024) IN CROATIA T. Dragovan & M. Šimac (30' Invited Lecture)
	1946	SUSTAINABLE PLANNING OF STATE ROAD NETWORK DEVELOPMENT IN CROATIA G. Puž & I. Budimir
	2106	COMPARATIVE EVALUATION OF IRI DERIVED FROM CONNECTED VEHICLE DATA AND LASER PROFILER MEASUREMENTS J. Domitrović
	1932	THE CHALLENGES CROATIAN EXPERTS HAVE FACED WHEN USING VARIOUS ROAD TRAFFIC NOISE CALCULATION METHODS BEFORE AND AFTER JOINING THE EU T. Džambas, A. Čudina Ivančev, V. Dragčević & Š. Bezina
	1999	DIGITAL TWIN OF ZAGREB AIRPORT INFRASTRUCTURE USING UNMANNED AERIAL SYSTEMS M. Car, I. Stipanović, M. Bračić & M. Tica
	1839	LEVERAGING DATA-DRIVEN SAFETY ASSURANCE AND DIGITAL-TWIN VALIDATION FOR SAFE AND RELIABLE AUTONOMOUS PUBLIC TRANSPORT SYSTEMS T. Jansen & R. Graafland
1895	LEVERAGING THE TRIPLE - LAYER BUSINESS MODEL CANVAS FOR THE TRANSPORT-RELATED BIOMETHANE INDUSTRY D. Nagy & T. Princz-Jakovics	
Hall B, Session 4 Special Session: Advanced Assessment and Monitoring of Bridges (Part 2) Moderators: Aleš Žnidarič, Andelko Vlašić & Ivan Duvrnjak	1969	EFFICIENCY OF THE COMPOSITE BRIDGE SECTIONS WITH OPEN AND BOX-SHAPED THIN-WALLED STEEL GIRDERS M. Srbić, A. Vlašić & B. Grdović
	1980	ASSESSMENT OF PERMISSIBLE SPEEDS (EN 15528) FOR RAIL VEHICLES ON THE EUROPEAN RAILWAY NETWORK REGARDING DYNAMIC VEHICLE-BRIDGE COMPATIBILITY R. Behnke & G. Grunert
	1994	RAILWAY BRIDGE SERVICEABILITY LIMIT STATES AND RAIL STRESSES FOR TRACK-BRIDGE INTERACTION – OVERVIEW AND CASE STUDY A. Vlašić, N. Mujkanović, M. Srbić & G. Hrelja Kovačević
	2019	PEDESTRIAN BRIDGES – A HOLISTIC APPROACH IN RATING THEIR EFFICIENT USE AND SUSTAINABLE DESIGN A. Bjelanović & I. Štimac Grandić
	2026	STRENGTHENING OF EXISTING RAILWAY BRIDGES USING CORRUGATED STEEL PLATE SHELLS C. Machelski, A. Czerepak & J. Nowak
	2078	TEMPERATURE-INDUCED VARIABILITY IN BRIDGE DYNAMIC RESPONSE: A PREREQUISITE FOR RELIABLE DAMAGE DETECTION D. Hekić, J. Kalin, M. Herbers, A. Anžlin & M. Kosić
	2080	INFLUENCE OF MODE COUPLING ON PERCEIVED HEALTH OF SCOURED BRIDGES USING VIBRATION-BASED MONITORING M. Kosić, L. Prendergast & A. Anžlin
	1845	A HYBRID PRECAST–IN-SITU APPROACH FOR PIERCAP CONSTRUCTION IN CHALLENGING INTER-TIDAL ZONES Sathyarayanan Dhandapano, Shanthi T, Ramya D & Thirunavukkarasu M
1840	BRIDGING THE GAP: SUSTAINABLE EMERGENCY RESCUE AREA (ERA) DESIGN THROUGH DECK INTEGRATION Jaishankar B, Sathyarayanan D & Sai Charan V	
Hall C, Session 4 Dynamics and Digitalization of Railway Tracks: From Numerical Models to Digital Twins Moderators: Otto Plašek & Niyazi Özgür Bezgin	1778	DETERMINATION OF TORSIONAL RESISTANCE OF RAIL FASTENINGS AND THEIR EFFECT ON STABILITY OF THE RAILWAY TRACKS N. Liegner
	1811	AUTOMATED BIM MODELS GENERATION IN RAILWAY INFRASTRUCTURE J. Ventura, F. Andrade, R. Gavina, R. Santos & D. Ribeiro
	1825	GIS-ENABLED DIGITAL INTEGRATION FOR RAILWAY MAINTENANCE F. Andrade, J. Ventura, R. Gavina, R. Santos & D. Ribeiro
	1938	SIMULATING EFFECT OF HIGH-SPEED RAIL ON UNDERGROUND TUNNEL THROUGH SOIL STRUCTURE INTERACTION ANALYSIS AND NUMERICAL MODELLING USING PLAXIS 3D M. Shah, N. Tiwari & P. J. Mehta
	1756	DETECTION OF MAINTENANCE ACTIONS BASED ON RAIL WEAR ANALYSIS A. Plotho

12:30 - 13:30 Lunch Break

Hall A, Session 5 Transport Infrastructure: Design, Rehabilitation, and Engineering Solutions Moderators: Meho Saša Kovačević & Mario Bačić	2076	APPLICATION OF GEOSYNTHETICS IN THE REMEDIATION OF URBAN ROADS J. Dominković, K. Minažek & S. Dimter
	1959	DEEP SOIL STABILIZATION IN TRANSPORTATION INFRASTRUCTURE USING INDUSTRIAL BY-PRODUCTS: THE CIRCUIT PROJECT FRAMEWORK M. S. Kovačević, M. Bačić, L. Librić & D. Jurić Kačunić
	1856	MULTI-CRITERIA ANALYSIS OF DESIGN ALTERNATIVES FOR AN URBAN SIGNALIZED INTERSECTION: A CASE STUDY FROM SPLIT (CROATIA) B. Majkovic, K. Rogulj, D. Breški & M. Protrka
	1982	EXIT RAMP DESIGN AT DUAL-CARRIAGEWAY INTERCHANGES: POTENTIAL IMPLICATIONS FOR OPERATING SPEEDS M. Šoštaric, M. Jakovljević, J. L. Vertlberg, M. Švajda & D. Gruhonjic
	1942	CHALLENGES IN RECONSTRUCTING STATE ROAD DC101 IN CROATIA A. Barišić, A. Čudina Ivančev, V. Dragčević, T. Džambas
	1957	A MULTI-DAY THERMAL SIGNATURE AND MACHINE LEARNING FRAMEWORK FOR PREDICTING DEFECT DETECTABILITY IN PASSIVE INFRARED THERMOGRAPHY OF REINFORCED CONCRETE SLABS A. Abdulridha, N. Alver, K. Shibano & T. Suzuki
	2042	ANALYSIS OF THE IMPACT OF REDUCING EVALUATION ITEMS ON URGENCY CLASSIFICATION IN SEWER PIPE INSPECTION S. Notsu, M. Fujju & Y. Morisaki
	1916	MANAGEMENT OF PORT-CITY OSMOSIS: URBAN TRANSPORT INTERMODALITY LED BY AUTONOMOUS VEHICLES F. Sortino, A. Petralia, C. Lo Vecchio & T. Giuffrè
	1771	A METHODOLOGICAL FRAMEWORK FOR RAILWAY TRESPASS RISK ASSESSMENT AND PRIORITIZATION A. Baldassarra, C. Marinacci & S. Ricci
	1788	THE FUNCTIONAL SAFETY OF ROAD INFRASTRUCTURE IN THE CONTEXT OF AUGMENTED CCAM PHYSICAL, DIGITAL AND COMMUNICATION (PDI) INFRASTRUCTURE SOLUTIONS D. Kokot, P. Rosenkranz, I. Erdelean & R. Vežoćnik
Hall B, Session 5 Transport Systems: Safety and Risk Management Moderators: Aleksandra Deluka Tibljaš & Dario Babić	1800	WAYSIDE TRAIN MONITORING SYSTEMS FOR THE SECOND TRACK DIVAČA KOPER D. Majč, M. Kosec, J. Karner & A. Schöbel
	1947	ROAD TRAFFIC CRASHES AND THEIR SOCIOECONOMIC IMPACTS IN SABON GARI LOCAL GOVERNMENT AREA, NIGERIA N. S. Aliyu Yaro, J. Adedeji, A. Usman & K. Surajo
	1857	ASSESSING RISK FACTORS FOR E-SCOOTER SAFETY: A WEIGHTED RISK MODEL BASED ON EXISTING LITERATURE Z. Mohammed & J. Attila
	1960	DESIGNING A QGIS-BASED MULTIMODAL DATABASE FOR LEVEL CROSSING MAPPING: A CROATIAN CASE STUDY D. Barić & S. Grabušić
	1985	ANALYSIS OF VEHICLE BEHAVIOR AT UNSIGNALIZED CROSSWALKS USING A NEAR-INFRARED LASER RANGING SENSOR Y. Mishima, K. Takada, T. Mukouyama & K. Yanagimachi
	2040	METHODOLOGY FOR MEASURING WATER FILM DEPTH ON THE ROAD SECTIONS PRONE TO AQUAPLANING UNDER THE TRAFFIC F. Trpčevski, N. Milovanović, V. Ilić, D. Gavran, S. Fric, S. Vranjevac & M. Lukić
	1849	MACHINE LEARNING-BASED PEDESTRIAN INTENTION PREDICTION MODELS FOR COLLISION WARNING AT UNSIGNALIZED CROSSWALKS S. H. Cangut & Y. Alver
	2098	ONBOARD MONITORING FOR INTELLIGENT ASSESSMENT OF RAILWAY TRACKS A. Malekjafarian (30' Keynote Lecture)
	1829	MACHINE LEARNING METHODOLOGY TO PREDICT THREE-DIMENSIONAL WHEEL-RAIL CONTACT FORCES IN HYBRID VEHICLE-STRUCTURE INTERACTION ALGORITHM E. Granato, P. Montenegro & T. Bittencourt
	1859	UTILIZATION OF AN FEM TURNOUT MODEL FOR SMART DIAGNOSTICS L. Raif, M. Hruziková, V. Salajka, P. Hradil, F. Kšica & O. Plášek
Hall C, Session 5 Special Session: Advances in Noise and Vibration-Based Approaches for Rail Infrastructure Condition Monitoring (URITMIS Workshop, Part 1) Moderators: Ivo Haladin & Abdollah Malekjafarian	1885	SMARTPHONE SENSOR DATA FOR MONITORING TRAM INFRASTRUCTURE - A CASE STUDY OF CLUJ-NAPOCA, ROMANIA Z. Orban, S. Kollo, H. Liszka, L. Alexa & F. A. Borsoszki
	1956	SUSTAINABLE BALLASTED TRACK DESIGN FOR NOISE AND VIBRATION MITIGATION S. Lenart, S. R. Karumanchi & D. Garcia Sanchez
	1970	ASSESSMENT OF DYNAMIC IMPACT FORCES GENERATED BY WHEEL FLATS: A COMPARISON OF ESTIMATES BY BEZGIN-KOLUKIRIK EQUATIONS AND MEASUREMENTS BY RUTE E. Balci, O. Repepoğlu, Y. E. Fedar & Y. E. Tetik

15:30 - 17:00 Session 6

ID Submission by Authors

Hall A, Session 6

Road Systems: Network Performance and Infrastructure Assessment

Moderators: **Danijela Barić & Tamara Džambas**

- 2074 APPLICATION OF TEMPORARY ROUNDABOUTS IN ENHANCING OF ROAD BASIC CAPACITY
H. Dragovan, S. Dimter, Ž. Kučibradić & M. Čaklovac
- 1768 OPTIMIZATION OF ROUNDABOUT GEOMETRY BASED ON MEASURED AND SIMULATED OPERATING SPEEDS
S. Šurdonja, M. Klobučar, Al. Deluka-Tibljaš & I. Ištoka Otković
- 1894 EQUILIBRIUM CONCEPTS AND DRIVER BEHAVIOR IN TRANSPORT NETWORK OPTIMIZATION: A SYSTEMATIC LITERATURE REVIEW
K. Krišto & J. Pašagić Škrinjar
- 1863 ACCESSIBILITY OF PEDESTRIAN CROSSINGS – CASE STUDY DUBROVNIK
V. Nivić
- 1914 COMPARATIVE ANALYSIS OF PEDESTRIAN CROSSING BEHAVIOUR BEFORE AND AFTER THE CONSTRUCTION OF A PEDESTRIAN OVERPASS
Y. Alver, P. Onelcin, E. Odabasi, Y. Karatas & E. Açikgöz
- 1983 DIRECTIONAL DISTRIBUTION ON TWO-LANE RURAL HIGHWAYS - SOME ANALYSIS AND RECOMMENDATIONS
I. Lovrić, B. Čutura & D. Maslač
- 1986 ASSESSMENT OF TRAFFIC EFFICIENCY INDICATORS FOR TWO-WAY, TWO-LANE RURAL HIGHWAYS THROUGH DIFFERENT HCM METHODOLOGIES
M. Ahac, S. Ahac, V. Blažinić, K. Lovato & I. Matoš

Hall B, Session 6

Road Traffic: Engineering, Flow Theory, and Network Operations

Moderators: **Dario Babić & Ivica Stančerić**

- 1760 DEVELOPMENT AND STRATEGIC FRAMEWORK OF THE MAIN CYCLING ROUTES NETWORK IN THE REPUBLIC OF CROATIA
Z. Klarić, M. Čosić, I. Jujnović & J. Jurak
- 1853 GIS APPLICATION IN MILITARY VEHICLES' ROUTE PLANNING
I. Gredejlj, D. Gajski, S. Ahac & M. Ahac
- 2001 IMPACT OF MILITARY MOBILITY ON THE USE OF EUROPEAN TRANSPORT INFRASTRUCTURE
N. Lukina, S. Vilke & M. Šafran
- 2058 BUCKLING, QUANTS AND CONTINUITY: NEW PARADIGMS IN TRAFFIC FLOW
N. Bezgin, R. B. Sikar & A. Saraçoğlu
- 1973 EVALUATING VARIATIONS OF ADVANCED MULTIMODAL SIGNAL CONTROL STRATEGIES FOR URBAN CORRIDORS
M. Knezevic, M. Vukojevic & A. Stevanovic

Hall C, Session 6

Special Session: Advances in Noise and Vibration-Based Approaches for Rail Infrastructure Condition Monitoring (URITMIS Workshop, Part 2)

Moderators: **Ivo Haladin & Abdollah Malekjafarian**

- 2109 URITMIS PROJECT OVERVIEW: VIBRATION-BASED PREDICTIVE MAINTENANCE OF URBAN RAILWAY INFRASTRUCTURE: FROM MONITORING TO DECISION SUPPORT
I. Haladin & K. Burnać
- 1803 VIBROACOUSTIC CHARACTERISATION OF BALLASTLESS TRAM TRACKS: COMPARING VARIOUS ON-SITE MEASUREMENT APPROACHES
K. Burnać, I. Haladin & K. Vranešić
- 2056 EXPERIMENTAL SETUP AND INSTRUMENTATION OF A FULL-SCALE BALLASTED RAILWAY TRACK TEST
M. Toprak, N. Bezgin & E. Yüksel
- 2079 MONITORING SCOUR AND SOIL–STRUCTURE INTERACTION IN PILE-SUPPORTED RAIL INFRASTRUCTURE USING VIBRATION-BASED DIGITAL TWINS
A. Ioakim & L. Prendergast
- 2095 TRACK INSTRUMENTATION FOR DIGITAL TWIN DEVELOPMENT IN URBAN SLAB TRACK STRUCTURES
F. Meštrović, I. Haladin & I. Duvnjak
- 2104 MACHINE LEARNING TECHNIQUES FOR LONG-TERM CONDITION MONITORING OF TRAMWAY TRACKS
L. Miličević, K. Burnać, I. Haladin, N. Trifunović, K. Vranešić & F. Meštrović

20:30 - 24:00 Gala Dinner

Day 4 - Saturday - 30th May

09:00 - 10:30 Session 7

ID Submission by Authors

Hall A, Session 7

Vehicle Systems Engineering: Design, Safety, and Management

Moderators: **Marjana Petrović & Nándor Liegner**

- 1847 STUDY OF THE STRENGTH OF AN OPEN WAGON STRUCTURE FOR LONG CARGO TRANSPORTATION
A. Lovska, J. Gelici, J. Dižo & P. Rukavishnykov
- 1851 INNOVATIVE SINGLE-AXLE BOGIE DESIGN FOR A REGIONAL RAIL VEHICLE
M. Bučko, D. Bata, A. Lovska & J. Dižo
- 1906 DESIGN OF A NEW TYPE OF SELF-LOCKING AXLE DIFFERENTIAL INTENDED FOR INSTALLATION IN LIGHT ROAD VEHICLES, DESIGNED TO INCREASE THE RELIABILITY OF FUNCTION
M. Blatnický, J. Dižo, I. Domanikova & K. Kravchenko
- 1908 DEVELOPMENT OF METHODOLOGY FOR CALIBRATION OF AN INERTIAL BRAKE TEST STAND
I. Domaniková, M. Blatnický, P. Slušňák & K. Kravchenko
- 1783 CARGO SECURING ASPECTS DEPENDING ON MILEAGE
P. Prochazka, M. Vlkovsky, J. Malisek & A. Ilkstrom-Kravcov
- 1792 EVALUATION OF THE IMPACT OF THE DISCRETIZATION ORDER OF THE PASSENGER WAGON BODY MODEL ON RIDE COMFORT
J. Dižo, A. Lovska, M. Blatnický & M. Bučko

Hall B, Session 7

Pavement Engineering: Innovation and Green Technologies

Moderators: **Tatjana Rukavina & Sanja Dimter**

- 1824 DEVELOPMENT OF SUSTAINABLE CONCRETE USING WASTE ASHES AS RECYCLED AGGREGATES: SOLUTION FOR GREEN URBAN INFRASTRUCTURE
M. Mendeš, N. Štirmer, I. Carević, J. Šantek Bajto, V. Ducman & M. Pavlin
- 1876 MECHANICAL CHARACTERIZATION OF MODERATELY WARM ASPHALT BINDER COURSE MIXES USING RUBBER-MODIFIED AND CONVENTIONAL BITUMENS
K. Almassy & A. Vattai
- 1892 CONSTRUCTION AND FIELD PERFORMANCE MONITORING OF EXPERIMENTAL PERMEABLE ASPHALT PAVEMENT WITH WARM MIX ASPHALT IN A PARKING AREA
I. Jakubénaité, A. Vaitkus, J. Škulvecké & O. Šernas
- 1897 EFFECT OF RECLAIMED ASPHALT PAVEMENT ON LCC-BASED ROLLER-COMPACTED CONCRETE PAVEMENTS
V. Butle, D. Reddy & S. Venkatraman
- 1974 SYNERGISTIC ASSESSMENT OF CARBON BLACK AND CRUMB RUBBER ON THE PERFORMANCE OF ASPHALT BINDER: PHYSICO-CHEMICAL CHARACTERIZATION AND DOSAGE OPTIMIZATION
A. Kumar, S. Hazim & K. P. Biligiri
- 2091 PERFORMANCE, SUSTAINABILITY, AND FIELD IMPLEMENTATION OF RECLAIMED ASPHALT PAVEMENT-BASED GEOPOLYMER CONCRETE FOR RIGID PAVEMENT APPLICATIONS
A. Ghosh, G.D. Ransinchung R.N. & P. Kumar
- 2092 FROM STORAGE TO SERVICE: AGEING-INDUCED POLYMER NETWORK DEGRADATION IN SBS-MODIFIED ASPHALT BINDERS
Sk. S. Islam, A. Ghosh, G.D. Ransinchung R.N. & S.S. Ravindranath
- 1796 PAVEMENTS AS ACTIVE THERMO HYDRAULIC SYSTEMS FOR SAFETY AND SUSTAINABILITY IN HOSPITAL ENGINEERING
C. Ristani, A. Nora, P. Tataranni, L. Barbaresi & C. Sangiorgi

Hall C, Session 7

Rethinking Urban Mobility: Intermodality, Safety, and Human Behaviour

Moderators: **Sanja Fric & Hrvoje Haramina**

- 1976 EVACUATION ROUTE PLANNING UNDER AFTERSHOCK RISK CONSIDERING BUILDING-RELATED HAZARDS AND PEDESTRIAN DENSITY
S. Sasaki, K. Takada, M. Fujju & Y. Morisaki
- 2041 DEVELOPMENT OF A TRAVEL PLANNING SUPPORT SYSTEM USING CONGESTION INFORMATION AND LARGE LANGUAGE MODELS
K. Yamamoto, Y. Morisaki & M. Fujju
- 1921 EXEMPLARY CALCULATIONS FOR NECESSARY TRAFFIC CHANGES THROUGH BEHAVIORAL CHANGES IN ORDER TO ACHIEVE EMISSION LIMITS USING THE EXAMPLE OF POTSDAM
A. Sauerländer-Biebl & A. Sohr
- 1810 ASSESSMENT OF THE IMPACT OF TRAFFIC SIGNALIZATION ON THE BEHAVIOR OF VULNERABLE ROAD USERS
M. Šimunović & I. Ištoka Otković
- 1838 MECHANICAL-CLINICAL MAPPING OF INJURY PATTERNS IN BICYCLE AND MOTORCYCLE CRASHES
R. Sikar, E. Ferhatlar, N. Bezgin & B. Demirci
- 1860 GAZE PATTERNS OF E-SCOOTER RIDERS AT URBAN INTERSECTIONS: A REAL-WORLD EYE-TRACKING STUDY
S. Rizehbandi, M. Fiolić, M. Ferko, T. Cvahte Ojsteršek & D. Babić

10:30 - 11:00 Coffee Break

11:00 - 12:30 Session 8

ID Submission by Authors

Hall A, Session 8

Railway Technologies: New Approaches for a Low-Carbon, Sustainable, and Safe Future

Moderators: **Niyazi Özgür Bezzin & Hrvoje Haramina**

- 1821 OPTIMIZATION OF A HYDROGEN-ENABLED MICROGRID FOR SEASONAL ENERGY STORAGE IN SUSTAINABLE RAILWAY INFRASTRUCTURE
C. Steindl, G. Fritscher & J. Heger
- 1830 A LIFE-CYCLE APPROACH TO SAFETY IN MAGLEV DERIVED RAILWAY TECHNOLOGIES
A. Bardhi & S. Ricci
- 1802 DROPPER-LENGTH-AWARE PREPROCESSING FOR ANOMALY DETECTION OF OVERHEAD CONTACT LINE FITTINGS
I. Matsumura & G. Ohashi
- 2068 GEOMETRIC OPTIMIZATION OF MAGNETIC FIELD ENERGY HARVESTERS UNDER PRACTICAL WEIGHT CONSTRAINTS FOR RAILWAY CATENARY SYSTEMS
P. Jeong & S. Ahn
- 2025 THE POTENTIAL FOR ECODRIVING SAVINGS IN REGIONAL AND SUBURBAN RAIL TRAFFIC BASED ON STUDIES CONDUCTED IN 2024–2025 USING JOURNEYS OPERATED IN CENTRAL POLAND
P. Stefańczyk & A. Szeląg
- 2093 FATIGUE CRACK GROWTH IN RAILWAY AXLES: THE ROLE OF TESTING ENVIRONMENT AND VARIABLE LOADS
L. Nahlik, P. Pokorný, P. Dlhý & P. Hutař

Hall B, Session 8

Pavement Design and Analysis: From Materials to Performance

Moderators: **Tatjana Rukavina & Sanja Dimter**

- 1939 COMPARATIVE DESIGN AND PERFORMANCE EVALUATION OF PAVEMENT DESIGN METHODS FOR LOW VOLUME ROADS USING EMPIRICAL MECHANISTIC AND FEM APPROACHES
J. Adedeji & M. Mostafa
- 1975 A UNIFIED FRAMEWORK FOR MECHANISTIC CORRELATION BETWEEN LABORATORY AND FIELD RUTTING RESPONSE IN ASPHALT PAVEMENT
S. Ramachandriaiah, S. Marimuthu & K. P. Biligiri
- 1998 MACHINE-LEARNING-BASED PREDICTION OF SKID RESISTANCE FROM 3D PAVEMENT SURFACE TEXTURE: IDENTIFYING AN EFFECTIVE TEXTURE DEPTH
M. Kováč, M. Brna & P. Pisca
- 2016 UNDERSTANDING IN-SITU PAVEMENT RESPONSES: A COMPARATIVE STUDY OF STATIC AND DYNAMIC ANALYSIS FOR AN INSTRUMENTED PAVEMENT SECTION
M. Ceric, P. Tavassoti, H. Baaj & O. Maadani
- 2020 PERFORMANCE-BASED LABORATORY STUDY ON ASPHALT MIXTURES UNDER TEMPERATURE AND TRAFFIC LOADING
R. D. Dermengiu, C. Răcănel & M. Dicu

Hall C, Session 8

Smart and Multimodal Urban Transport: Data-Driven Planning

Moderators: **Maja Ahac & Aleksandra Deluka Tibljaš**

- 1798 EXPLORING THE FIRST AND LAST MILE CONNECTIONS FOR RAILWAY PASSENGER TRAVEL: EVIDENCE FROM ZAGREB
I. Balaš, M. Petrović, M. Starčević & D. Šipuš
- 1848 USER PROFILE-BASED COMPARISON OF IMPROVEMENT EXPECTATIONS IN SHARED E-SCOOTER SYSTEMS
I. Turker, Y. Alver & D. Azik Ozkan
- 1995 CARGO BIKES IN URBAN LOGISTICS: AN INFRASTRUCTURE READINESS ASSESSMENT FOR THE CITY OF ZAGREB
L. Ljubotina, B. Mandžuka, M. Ševrović & A. Pirdavani
- 1996 REAL-TIME AI MONITORING: ADVANCING SUSTAINABLE AND SAFE ROAD NETWORKS
D. Homola, S. Čarman & B. Navarro
- 2000 ENHANCING STRATEGIC TRANSPORT MODELLING THROUGH MULTI-SOURCE DATA INTEGRATION: A CASE STUDY OF THE ŽILINA SUMP
M. Dričiak & J. Celko
- 2009 A METHODOLOGICAL FRAMEWORK FOR EXTRACTING PEDESTRIAN MOVEMENTS FROM WI-FI SENSING DATA IN A CONGESTED CENTRAL URBAN AREA
T. Komatsubara, K. Takada, Y. Morisaki & M. Fujii
- 2036 METHODOLOGY FOR MULTIMODAL SERVICE LEVEL ASSESSMENT IN ROMANIAN TRAFFIC CONDITIONS
M. Mihai & S. Patiu

12:30 - 13:00 Hall A - Closing Ceremony