

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

COLORADO SPRINGS, CO USA | NOVEMBER 17-21, 2025

MONDAY NOVEMBER 17, 2025

5:30pm-
7:30pm

WELCOME COCKTAIL FUNCTION

Available to sponsor

TUESDAY NOVEMBER 18, 2025

08:00am

MORNING COFFEE AND NETWORKING

08:30am

OPENING CEREMONY

Welcome Ceremony and Address

Kari Gonzales, Chair, IHHA + President & CEO, MxV Rail, USA

Keynote

Ian Jefferies, President and Chief Executive Officer, Association of American Railroads (AAR), USA

The Innovation Pipeline: From Discovery to Deployment

Panelists: **Eric J. Gehringer**, Executive Vice President-Operations, Union Pacific, USA

John Orr, Executive Vice President, Chief Operating Officer, Norfolk Southern, USA

Marco Caposciutti, CEO, Trenitalia, France

Dr Jasmin Bigdon, CTO, Deutsche Bahn, Germany

Guilherme Mello, CEO, MRS Logística, Brazil

Moderator: **William Vantuono**, Editor-in-Chief, Railway Age, USA

10:00am

COFFEE BREAK AND EXHIBITION NETWORKING

10:30am

OPENING CEREMONY

Keynote

Dr Alan Beroud, Chairman, UIC + CEO, Polish State Railways

Tech on Track: Advancing Railway Safety Through Innovation

Panelists:

James Schwichtenberg, Vice President and Chief Safety Officer, CSX, USA

James M Derwinski, CEO/Executive Director, Metra, USA

Dr Fuminao Okumura, Board Member, Japan Transport Safety Board (JTSB), Ministry of Land, Infrastructure, Transport and Tourism, Japan

John R. Fleps, Vice President & Chief Safety Officer, Norfolk Southern, USA

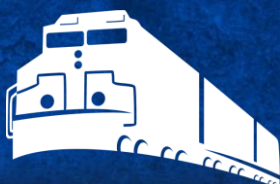
Moderator: **Hon Ronald L Batory**, Director, Amtrak Board, USA

IHHA Heavy Haul Award

11:50am

LUNCH, EXHIBITION NETWORKING AND IHHA ePOSTERS

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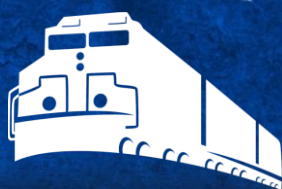
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WCRR PARALLEL TECHNICAL PAPERS

	VEHICLE/TRACK INTERACTION MODELLING & TESTING <i>-Oral-</i>	DERAILMENT RISK, MITIGATION & DETECTION <i>-Oral-</i>	ENVIRONMENTAL SUSTAINABILITY <i>-Oral-</i>	TRACK BUCKLING <i>-Oral-</i>	SPECIAL TRACKWORK <i>-Oral-</i>	INSPIRING THE FUTURE OF RAIL TRANSPORT <i>-Interactive-</i>
1:00PM	Opening Comments by Session Chair Dr Shintaro Minoura RTRI, Japan	Opening Comments by Session Chair Dr Pasquale Saienni, Italian National Safety Authority, Italy	Opening Comments by Session Chair Dr Sena Kizildemir, Thornton Tomasetti, USA	Opening Comments by Session Chair Anup Chalisey, RSSB, UK	Opening Comments by Session Chair David Staplin Retired Amtrak, USA	Opening Comments by Session Chair Dr Anish Poudel, MxV Rail, USA
1:05PM	Empirical Evaluation and Adaptation of a Track Deterioration Model: Spotighting Ballast Performance Ursula Ehrhart, Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria	Assessing the Case for Rolling Stock and Infrastructure Design Borne Features that Can Provide Guidance to Trains When Derailed Paul Gray, RSSB, UK	New Materials Developments for Rolling Stock & Life Cycle Analysis Approach Samuel Puech, SNCF Voyageurs, France	Influence of De- Anchor Lengths on RNT Re- Establishment Length in Cold Weather Rail Breaks Dr Stephen Wilk, MxV Rail, USA	Evaluation of the Effect of Track Irregularity on Damage to Turnout Components and Vehicle Dynamics at Turnouts for 120 km/h Running on Conventional Railway Katsutoshi Shiota, Railway Technical Research Institute (RTRI), Japan	The First Hybrid Train in Commercial Operation in France: Challenges, Outcome, Development Outlook Clément Depature, SNCF, France Matthieu Renault, SNCF Voyageurs, France Beyond the Tracks: Integrating Total Cost of Ownership and Externalities for a Sustainable Railway Decarbonization Antoine Belleguie, University Gustave Eiffel, France Determination of the Actual Energy Saving Provided by Upgraded DC Supply Systems Domenico Dr Daniele Gallo, Institute (INRiM), Italy Giordano, Italian National Metrology Institute (INRiM), Italy Use of Adaptive Kalman Filter for Location Estimation During Wheel Slip and Slide Dr Monish Sengupta, Certifer SA, UK
	Dynamic Interaction Simulation Between Wheel and Turnout Frog Using Revenue Service Railroad Wheel Profiles Jaeik Lee, RailTEC, University of Illinois at Urbana- Champaign, USA	Enhancing Railway Operations Safety Through Innovative Hazard Detection with Distributed Acoustic Sensing Dr Milad Salemi, Sensonic, USA	Study of the Mechanical Properties of Recycled Pure Copper from Contact Wires Kadir Gok, Univ. Lille, CNRS, France	Effect of Fixed Structures: Analytical Modeling and a Pilot Field Study Kamyar Kosarneshan, Rail Transportation and Engineering Center (RailTEC), University of Illinois Urbana- Champaign, USA	The Development of a Maintenance- Optimized Turnout in the EU Shift2Rail Program Uwe Oßberger, voestalpine Railway Systems, Austria	
	Highly Adherent Leaf Layers Jordan Brant, Institute of Railway Research, University of Huddersfield, UK	Development of Derailment Detection Function for High-Speed Trains by Monitoring Acceleration of Bogie Frame Dr Yayoi Misu, East Japan Railway Company, Japan Takayuki Shinohara, East Japan Railway Company, Japan	Progress of Recent Innovations in the Sustainability Performance of European Railway Rolling Stocks, Infrastructures and Stations Laurent Nicod, Alstom, France Philippe Clement, SNCF Voyageurs, France	Evaluation of the Influence of Track Maintenance Work on Lateral Resistance of the Track Ballast Yohei Hayakawa, West Japan Railway Company, Japan	Method of Determining Predictive Failure by Focusing on The Switching Time of Electric Point Machines Yuichi Morita, East Japan Railway Company, Japan	

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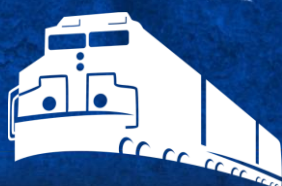
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		Quantitative Analysis of Freight Train Length and Derailment Risk Xinhao Liu , University of Illinois Urbana-Champaign, USA	Enhancing Process Efficiency and Project Sustainability with Information Management Alessandro Mambrin , Italferr, Italy Francesco Dalessandri , Italferr, Italy	Stress-Free Temperature Variation and Buckling Risk Along the Railway Tracks: Dynamic FEA Modelling and Implications Ana Skarova , University of Southampton, UK	Dynamic Simulations and Measurement Analysis of Speed Impact on Track and Vehicle Wear and Safety at Metro #8 Turnout Saeed Hossein-Nia , National Research Council of Canada	Analysis and Comparison of Railway Research, Development and Innovation Management in North America and Europe and Solutions to Increase its Efficiency Bertram Ludwig , UNIFE - European Rail Supply Industry Association, Belgium Artur Fojud , UIC, France LTO Batteries for Rolling Stock Operating Non-Electrified Lines: A Time-Varying Model Improving Cell Balancing Control Dr Giuseppe Graber , Department of Industrial Engineering - University of Salerno, Italy Simona Sabatino , Department of Industrial Engineering - University of Salerno, Italy
2:25PM	BREAK					
	ALTERNATIVE ENERGY SOURCES <i>-Oral</i>	PASSENGER HEALTH <i>-Oral-</i>	DETECTION OF WHEEL ISSUES <i>-Oral-</i>	TRACK RATING, CONSTRUCTION, & REGULATION <i>-Oral-</i>	INFRASTRUCTURE PERFORMANCE, INSPECTION, & MONITORING <i>-Oral-</i>	OPTIMIZATION & ENERGY EFFICIENCY <i>-Interactive-</i>
2:35PM	Opening Comments by Session Chair Clément Depature , SNCF, France	Opening Comments by Session Chair Dr Stefano Guidi , UIC, France	Opening Comments by Session Chair Dr Constantine Tarawneh , UTRGV, USA	Opening Comments by Session Chair Bryan Sooter , American Public Transport Assn., USA	Opening Comments by Session Chair <i>Stay tuned</i>	Opening Comments by Session Chair Dr Marco Sacchi , Hitachi Rail, Italy

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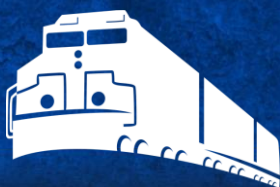
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2:40PM	Development of 2.4 MW Hydrogen Train & Associated Infrastructure in India Ashish Kumar Gupta , Research Design Standard Organisation (RDSO), Ministry of Railways, India Deepak Tomar , Research Design Standard Organisation (RDSO), Ministry of Railways, India	Healthier Passenger Rail: Influence of the Recirculation System on the Spreading of Exhaled Particles in a Passenger Train Daniel Schmeling , German Aerospace Center (DLR), Germany	Stress Anomaly Detectability of Overheated Wheels Using Back-to-Back Distance Changes Kazuyuki Handa , Railway Technical Research Institute (RTRI), Japan	AI for a Better Technical Railway Track Regulation Avril Bertrand , SNCF Réseau, France	Comparative Study of the Dynamic Performance of Railway Crossings in the Facing and Trailing Directions Dr Xiangming Liu , China Academy of Railway Sciences Company Limited (CARS), China	Hybrid Energy Storage System for Train Braking and Photovoltaic Energy Ivan De Palma , Rete Ferroviaria Italiana (RFI), Italy Claudio Spalvieri , Rete Ferroviaria Italiana (RFI), Italy Opt4Rail – Optimization for railway Dr Angela Nocita , Ferrovie dello Stato Italiane - FS Group, Italy Dr Giuseppe Carcasi , Rete Ferroviaria Italiana (RFI), Italy Towards an Intelligent Traction Energy Management System Dr Aaron Rostron-Barrett , RSSB, UK
	Waste Energy Analysis in Hydrogen trains for Increased System Efficiency Steffen Wieser , German Aerospace Center (DLR), Institute of Vehicle Concepts, Germany Markus Kordel , German Aerospace Center (DLR), Institute of Vehicle Concepts	Antimicrobial Surfaces on Mass Transit Rolling Stock: Material Science Analysis and Sanitary Monitoring Criteria Samuel Puech , SNCF Voyageurs, France	Analysis and Investigation of Wheel Loads Using Strain Gauges and Thermal Imaging Enrico Lubbe , Stellenbosch University, South Africa	Introduction to Track Structural Capacity Rating and Example Use Case for Low Volume Railroad Track Marcus Scott Dersch , University of Illinois Urbana-Champaign, USA	An Autonomous Transportable Inspection Trolley (ATIT): Design Optimization and Functional Evolutions Andrea Strino , Rete Ferroviaria Italiana (RFI), Italy	Integration of Signaling data into Real-Time Eco-driving Algorithms for Regional Trains Dr Vincenzo Galdi , Department of Industrial Engineering - University of Salerno, Italy
	Performance Test of Fuel Cell Test Railway Vehicle on Railway Vehicle Roller Rig Testing Facility Takamasa Yamada , Railway Technical Research Institute (RTRI), Japan	Reduced Infection Risks: A tailored Ventilation Concept for Passenger Trains Decreasing the Dispersion of Exhaled Aerosol Particles Dr Daniel Schmeling , German Aerospace Center (DLR), Germany	Identifying and Localizing Multiple Wheel Flats from Impulsive Excitation by Low-Speed Trains Dr David Rostin Ellis , Stellenbosch University, South Africa	Towards a Collaborative Platform for Railway Infrastructure Projects Dr Judicaël Dehotin , SNCF Réseau, France Prof Pierre Jehel , Université Paris-Saclay, CentraleSupélec, France	Continuous Infrastructure Monitoring (CIM) – Introduction of a Predictive Maintenance Strategy within DB Dr Klaus Ulrich Wolter , DB Systemtechnik, Germany	

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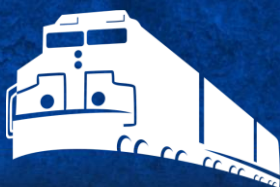
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	Study on Inexpensive Configuration of Wireless Power Transfer Systems for Railway Vehicles Hiroshi Yoda, Railway Technical Research Institute (RTRI), Japan	Automation and Control Within Robotics Applied to Sanitizing Processes on Trains and Small Stations Francesca Barbetta, Trenitalia, Italy	Practical Use of Wheel Impact Load Detector Data for Detecting Vehicle Defects in Freight Wagons Dr Adam Bevan, University of Huddersfield, UK	A New Calculation Framework for Railway track Designers and Maintainers to Better Understanding and Estimate Service Loads Prof Yann Bezin, University of Birmingham, UK	Condition Monitoring of Crossing Running Surface Geometry – A Comparison Between Manual Inspections and Sleeper Mounted Accelerometers Karl Norberg, Chalmers University of Technology, CHARMEC/ Department of Mechanics and Maritime Sciences, Sweden	Dr Giuseppe Graber, Department of Industrial Engineering - University of Salerno, Italy Railway Interline Power Flow Converter: A FACTS to Ensure Double-Side Feeding in 25kV/50Hz Railway Lines Benoit Sonier, SNCF Réseau, France
4:00PM	BREAK					
	HUMAN DEVELOPMENT & PERFORMANCE <i>-Oral-</i>	MAGNETIC LEVITATION <i>-Oral-</i>	VIBRATION & NOISE <i>-Oral-</i>	CROSSTIES/ SLEEPERS <i>-Oral-</i>	BRIDGES & TUNNELS <i>-Oral-</i>	OPERATIONAL SAFETY <i>-Interactive-</i>
4:10PM	Opening Comments by Session Chair Dr Beth Veinott, Michigan Tech University, USA	Opening Comments by Session Chair Fabien Letourneaux, SNCF, France	Opening Comments by Session Chair <i>Stay tuned</i>	Opening Comments by Session Chair Marcus Scott Dersch University of Illinois Urbana-Champaign, USA	Opening Comments by Session Chair Dr Eugenio Fedeli, Stretto di Messina, Italy	Opening Comments by Session Chair Corey Pasta, MxV Rail, USA
	The Development of an Occupational Health and Wellbeing Management System in GB Rail to Bring Health on par with Safety Lisa Regan, RSSB, UK The DNA of High Performing Innovation Teams Mike Wright, Network Rail, UK Dr Amanda Potter, Zircon Management Consulting, UK	Development of the Maglev Dynamic Simulator Hiromitsu Kato, Central Japan Railway Company, Japan Leveraging Digital Twins for Data-driven Operations of Superconducting Maglev Kazuki Matsumoto, Central Japan Railway Company, Japan Masaya Kawamura, Central Japan Railway Company, Japan	Under Sleeper Pads as a Countermeasure to the Low Frequency Vibration in Soft Soil Areas Antti Pelho, Research Centre Terra, Tampere University, Finland Systemic Representation of Railway Noise Franck Poisson, SNCF, France	Evaluation of Ballast Box Testing for Turnout Sleepers Using Track Data Gernot Grohs, Institute for Railway Infrastructure Design, Graz University of Technology, Austria Francesco Marangon, Institute for Railway Infrastructure Design, Graz University of Technology, Austria Investigation of the Actual Condition of Prestressed Concrete Sleepers with Cracks and Proposal of Maintenance Methods	Study on Dynamic Characteristics Analysis of Railway Bridge Transition Section in Cold Region Considering Track Irregularity Liang Dong, State Key Lab. for Track Technology of High-Speed Railway, China Academy of Railway Sciences (CARS) China Kriging and Mechanics-Based Kriging for Multiple Limit States Active Learning Reliability Analysis of Rail Bridges	Active vs. Passive Safety Measures in Railway Systems Dr Ralf Kaminsky, Siemens Mobility, Germany Dr Walter Martin Struckl, Siemens Mobility, Austria Predicting Level Crossing Closures for Enhanced Traffic Efficiency and Emergency-Optimized Road-Rail Integration Konstantin Geist, University of Applied Sciences Mainz (i3mainz Institute for Spatial Information and Surveying Technology), Germany

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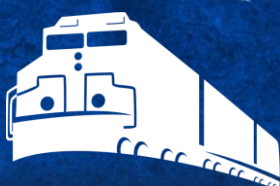
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				Shintaro Minoura , Railway Technical Research Institute (RTRI), Japan	Mouhammed Achhab , Université Paris-Saclay, CentraleSupélec, France	Rail-to-Ground Voltage Assessment in High Traffic Density Railway Lines: Case of RER E in Ile-de-France Region Juan-José Munoz- Vargas , SNCF Réseau, France
	Attracting New Generation of Railroaders in North America through K- 12 Activities and Programs Dr Tyler Dick , University of Texas at Austin, USA	Development of the Superconducting Maglev Vehicle for the Chuoh Shinkansen Naoki Okamoto , Central Japan Railway Company, Japan Soshi Kawakami , Central Japan Railway Company, Japan	Beyond the Tracks: Mitigating Noise Pollution from Parked Trains Pinar Yilmazer , International Union of Railways (UIC), France	Investigation for Under Sleeper Pads Effects on Traffic Load Distribution by Discrete Elements Simulation Michel Woné , SNCF Réseau, France	Fire Resistance of Tunnel Structures Requirement of Structures – Safety Functional and Technical Specification in the TSI Regulatory Evolution Giampaolo Mancini , Italcertifer, Italy	Use of LIDAR to Develop Comprehensive Detailed Information on the Physical and Geometric Characteristics of Level Crossings and Their Relationship to Incident Occurrence Francesco Bedini Jacobini , University of Illinois Urbana- Champaign, USA
		Integrating Maglev- Derived Systems into Existing European Rail Infrastructure Dr Angela Nocita , Ferrovie dello Stato Italiane - FS Group, Italy Dr Giuseppe Carcasi , Rete Ferroviaria Italiana (RFI), Italy	An Innovative and Resilient Insulated Rail Joint for all Applications Dr Andrea Bracciali , University of Florence, Italy Gianluca Megna , University of Pisa, Italy	Physical Models for Predicting the Aging of Mechanical Track Systems Kuralay Kadekeshova , Université Paris- Saclay, CentraleSupélec, France		Improving Drivers’ Performance via Automatic Driver Competency Indicators Marcus Carmichael , RSSB, UK
5:35PM	CLOSE OF CONFERENCE SESSIONS					
5:35PM- 7:00PM	EXHIBITION NETWORKING RECEPTION <i>Available to sponsor</i>					

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WEDNESDAY NOVEMBER 19, 2025

7:30am

WOMEN IN RAIL BREAKFAST | Sponsored by Wabtec Corporation

Global Tracks: Women Engineering the Future of Rail

Panelists: **Kari Gonzales**, Chair, IHHA + President & CEO, MxV Rail, USA

Kate Holling, General Manager Rail, BHP, Australia

Gina Trombley, Executive VP of Sales and Marketing, and Chief Commercial Officer – Americas, Wabtec, USA

Moderator: **Tiffany Wenrich**, Education Chair, League of Railway Women, USA



8:30am

MORNING PLENARY

Keynote

Richard Cohen, Managing Director Rail, Port & Core Services, Rio Tinto Iron Ore, Australia

Driving Excellence: Harmonizing the Power of Research to Advance Railways

Panelists: **Luisa Moiso**, Director of Research, RSSB, UK

Giorgio Travaini, Executive Director, Europe's Rail Joint Undertaking

Dr Masamichi Sogabe, Executive Director, Railway Technical Research Institute (RTRI), Japan

Professor Ravi Ravitharan, Director, Monash Institute of Railway Technology, Australia

Dr David de Almeida, Director for Research, SNCF, France

Moderator: **Scott Cummings**, AVP, Research and Innovation, MxV Rail, USA

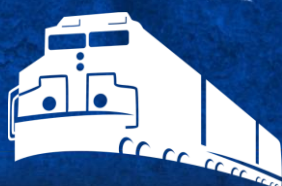
9:30am

COFFEE BREAK AND EXHIBITION NETWORKING

WCRR PARALLEL TECHNICAL SESSIONS

	COLLABORATION, PARTNERSHIP, & INTEROPERABILITY <i>-Oral-</i>	COMMUNICATIONS & TRAIN CONTROL <i>-Oral-</i>	ENERGY EFFICIENCY <i>-Oral-</i>	WEATHER & CLIMATE CHALLENGES <i>-Oral-</i>	VEHICLE TRACK INTERACTION <i>-Oral-</i>	SAFE & OPTIMIZED FIXED ASSETS <i>-Interactive-</i>
9:40am	Opening Comments by Session Chair Dr Eric Fitzsimmons , Kansas State University, USA	Opening Comments by Session Chair Dr Fabio Senesi , Rete Ferroviaria Italiana, Italy	Opening Comments by Session Chair Philippe Clement , SNCF, France	Opening Comments by Session Chair Marcus Carmichael , RSSB UK	Opening Comments by Session Chair Dr Erimitsu Suzuki , RTRI, Japan	Opening Comments by Session Chair Benjamin Bakkum , MxV Rail, USA
9:45am	Strategies in Rail Research from the Europe's Rail SRG View Miroslav Haltuf , Europe's Rail SRG, Czech Republic	Safety Rail – Novel Approach for an Optical Fiber Based Identification System for Train Position and Integrity Wolfgang Schuster , PRODES, Austria	Energy Saving Tramway Amsterdam Remco Paulussen , Railwaysafe, The Netherlands	Verification of Countermeasures Against Snow Accumulation Around Bogies in Shinkansen Cars Akihito Kimura , East Japan Railway Company, Japan	System Design and Dynamic Performance Simulation of a High-Speed Inboard Bogie Sanghoon Choi , Korea Railroad Research Institute, Republic of Korea	Research on Automatic Train Protection Technology for Special Rail Vehicles Xiaoning Xu , China Academy of Railway Sciences Company Limited (CARS), China
	The Europe's Rail Joint Undertaking: The Unique Public Private Partnership for Rail Research in Europe – Investing 1.2 billion eEros for	Further Quality Improvement by Introducing Monitor- Run Test for Automatic Train Control (ATC)	Beyond the Hype: Aerodynamic Challenges and Energy Efficiency of Hyperloop Trains	Resilient Railways Facing Heavy Rains (RERA-Rain) Konstantina Kopsalidou , International Union	Development of Multi-Body Dynamics Modelling for Three-Piece Freight Vehicle Using MATLAB: A	Technology Systems in Railway Infrastructure Caterina Varriale , Italferr, Italy

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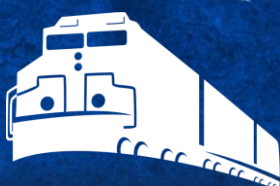
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	a Reliable, Efficient, Future Proof and Integrated European Railway Network Giorgio Travaini , Europe's Rail Joint Undertaking, Belgium	Ground Equipment Replacement Shogo Kaneko , Central Japan Railway Company, Japan Masaki Masumoto , Central Japan Railway Company, Japan	Dr Jonathan Tschepe , Technische University of Berlin, Germany	of Railways (UIC), Greece Concepción Toribio , CEMOSA, Spain	Simulation Package and Optimization Platform Abhay Kumar , Ministry of Railways, Government of India Abhishek Kumar Gautam , Ministry of Railways, Government of India	Daniel Puglisi , Italferr, Italy Method for Optimal Allocation of Investment Resources in Railway Track Management Mami Matsumoto , Railway Technical Research Institute (RTRI), USA
	Positive Train Control Interoperable Lifecycle Management Dr Alejandro Gonzalez-Ruiz , MxV Rail, USA Emma Procopio , MxV Rail, USA	A World's First Satellite Augmentation System for Railways and Automotive Applications Roberto Capua , SOGEL, Italy		Impact of Climate-Induced Storms on the GB railway System: A Case Study of Dudley, Eunice, and Franklin Storms 2022 Aliya Kassen , University of Birmingham, UK	On the Inherent Shape of Railway Track Dr Jim Hyslip , HNTB Corporation, USA	Sustainable Modular Prefabricated Railway Station Prof Katarzyna Rzeszut , Faculty of Civil and Transport Engineering, Poznan University of Technology, Poland Dr Monika Siewczyńska , Faculty of Civil and Transport Engineering, Poznan University of Technology, Poland
10:45am	BREAK					
	RADIO COMMUNICATION <i>-Oral-</i>	RISK ASSESSMENT & MANAGEMENT <i>-Oral-</i>	AERODYNAMICS & NOISE <i>-Oral-</i>	SAFETY ASSESSMENT & DERAILMENT MITIGATION <i>-Oral-</i>	ROLLING CONTACT FATIGUE <i>-Oral-</i>	TESTING & STANDARDS <i>-Interactive-</i>
10:55am	Opening Comments by Session Chair Bivesh Paudyal , MxV Rail, USA	Opening Comments by Session Chair Nigel Peters , Nigel Peters Professional Services, Canada	Opening Comments by Session Chair Francesco Romano , Arsenale Express, Italy	Opening Comments by Session Chair Christopher Barkan , University of Illinois Urbana-Champaign, USA, USA	Opening Comments by Session Chair Paul Gray , RSSB, UK	Opening Comments by Session Chair Guillaume Craveur , SNCF, France
	Antennas Assessment for Coexistence of FRMCS in Railway Mobile Radio 900 MHz Band with GSM-R Dr Nazih Salhab , SNCF Réseau, France	The Risk of Fires in Railways Grace Mukunzi , Division of Fire Safety Engineering, Lund University, Sweden Evalyne Arinaitwe , Division of Fire Safety Engineering, Lund University, Sweden	Study About Different Methodology for Aero-acoustic Source Characterization for the Rolling Stock Fabrice Aubin , SNCF Voyageurs, France	Guard Rail Climb Derailments in Freight Yard Operation: Cause Finding and Prevention Jessica Wieder , BNSF Railway, USA Corey Pasta , MxV Rail, USA	Experimental Investigation on Rolling Contact Fatigue on Hadfield Steel Swing Nose Crossing Kinami Adachi , East Japan Railway Company, Japan	Development of Technical Specifications for Korean New High Speed Trains Hyuck Keun (H.K.) , Korea Railroad Research Institute, Republic of Korea

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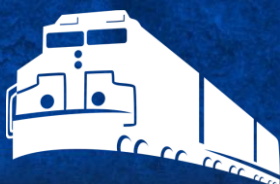
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	Multipath Protocol Studies for Hybrid FRMCS Networks in the 5G-RACOM Project Susanne Zweimann , Funkwerk Systems, Germany Jens Köcher , Funkwerk Systems, Germany	Accounting for Spatially Varying Track Conditions in Derailment Risk Assessment Brennan Gedney , University of South Carolina, USA	(UIC CROSS-T Project) Crossing Effects Between High Speed Trains and Freight Trains Anup Chalisey , RSSB, UK	Evaluating Derailment Mitigation Measures Numerical Analysis to Improve Railways Safety Matteo Santelia , Politecnico di Milano, Italy	Construction of a Predictive Model of Rail Surface Rolling Contact Fatigue Crack Initiation and Proposal for Preventive Grinding Method Dr Masahiro Tsujie , Railway Technical Research Institute (RTRI), Japan	Evolution of On-Board Multimedia and Telematic Systems - IEC and UIC Perspective Davide Amato , Sadel, Italy Laurent Llerena , ITxPT, Belgium Transforming Rail Safety and Efficiency: A Certification Methodology for GNSS Integration into ERTMS Using a Hybrid Virtualized Testing Environment Nerea Canales Sebastian , Rete Ferroviaria Italiana (RFI), Italy Open Standards Implementation: An Innovative Approach for Railway Infrastructure Projects Edouard Chabanier , SNCF Réseau, France Alexandre Vautrin , SNCF Réseau, France Future Testing and Validation of Railway Assets Sharon Odetunde , RSSB, UK
		A Framework for Damage Assessment and Mitigation in Coastal Railroads Subjected to Storm-Induced Surge and Wave Dr Yousef Darestani , Michigan Technological University, USA	Assessment of Aerodynamic Coefficients of a Multi-Objective Optimized 400km/h High-Speed Train by Wind Tunnel Testing Beomsu Kim , Korea National University of Transportation, Republic of Korea	The Importance and Limitations of Accident Data Uses for Safety Assessment Stephen Quéva , EPSF France Chabane Mazri , INERIS, France	The Developing of a Numerical Tool for Predicting Wear and RCF on Wheels Daniele Regazzi , Lucchini RS, Italy	
12:00pm	LUNCH, EXHIBITION NETWORKING AND IHHA ePOSTERS					
	INTERNATIONAL COLLABORATION <i>-Oral-</i>	DIGITAL TWIN <i>-Oral-</i>	PASSENGER HEALTH & HAPPINESS <i>-Oral-</i>	TRACK BUCKLING <i>-Oral-</i>	INFRASTRUCTURE INSPECTION <i>-Oral-</i>	ROLLING STOCK SAFETY & RELIABILITY <i>-Interactive-</i>
1:00pm	Opening Comments by Session Chair Gerhard Thelen , Retired Norfolk Southern, USA	Opening Comments by Session Chair Vincent Ganthy , RSSB, UK	Opening Comments by Session Chair Gio DiDomenico , Kiewit Engineering Group, USA	Opening Comments by Session Chair Riley Edwards , University of Illinois Urbana-Champaign, USA	Opening Comments by Session Chair Ramez Hajj , University of Illinois Urbana-Champaign, USA	Opening Comments by Session Chair Dr Aaron Rostron-Barrett , RSSB, UK

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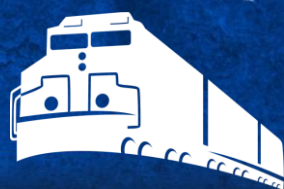
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2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

COLORADO SPRINGS, CO USA | NOVEMBER 17-21, 2025

1:05pm	The EU-Rail System Pillar – System Engineering to support the Single European Railway Area Ian Conlon , Europe's Rail Joint Undertaking, Belgium	Railway Engineering Digital Twin System Architecture Research Chenkun Jin , China Academy of Railway Sciences (CARS), China	Analysis of Airflow and Temperature Distribution in a Double-Decker Compartment to Improve Passenger Thermal Comfort NaYeong Kim , Korea National University of Transportation, Republic of Korea	Vibration-based Inspection Method for Continuous Welded Rails using Finite Element Analysis and Artificial Intelligence Dr Piervincenzo Rizzo , SWANSON School of Engineering, University of Pittsburgh, USA	Wood Tie Life Study Using Machine Vision Technologies Yin Gao , MxV Rail, USA	Assessment of Non-FRMCS Transport Bands Coexistence with FRMCS Onboard Antenna Systems Juan-José Munoz-Vargas , SNCF Réseau, France Train Simulator Implementation for the Indirect Estimation of Traction Motor Temperature Without Design Data Knowledge Alfredo Biancucci , Trenitalia, Italy Chiara Triti , Trenitalia, Italy
1:25pm	The Different Third-Party Activities in the Global Railway System Luigi Francesco Caccamo , Italcertifer, Italy	Predictive Maintenance and Vehicle performance monitoring Using a Digital Twin Model for Freight Wagons Dr Jou-Yi Shih , ZynaMic Engineering, Sweden	Short and Long-Term Air Quality Prediction in Underground Station Theo Schwartz , SNCF Voyageurs, Rolling Stock Engineering Department, France	Reliability-Based Track Instability Mitigation During Hot Weather Extremes Dr Gary Fry , Fry Technical Services, USA	Damage Detection and Classification of Ultrasound-Based Rail Head Inspection Guillermo Montero , Thornton Tomasetti, USA	Puncture Resistance of a DOT-105J500W Tank Car Used for Transportation of liquified CO2 Dr Przemyslaw Rakoczy , ENSCO, USA Onboard Diagnostic Device for Fault Detection and Data Analysis: A Remotely Configurable System Capable of Processing Algorithms Based on Vehicle Signals Marco Simone Gaudissard , Trenitalia, Italy Multiphysics Modelling of an Autonomous Transportable Inspection Trolley Luca Ricciardi , Rete Ferroviaria Italiana (RFI), Italy Andrea Strino , Rete Ferroviaria Italiana (RFI), Italy
1:45pm	Strengthening Biodiversity and Ecosystem Services in Railways: UIC's Integrated Strategy for Sustainable Land Management Lorenzo Franzoni , International Union of Railways (UIC), France	Utilization of 3D Point Cloud Data for On-site Survey Operations in the Railway Sector Tatsuro Watanabe , West Japan Railway Company, Japan	Restoring Cellular Connectivity on Athermic Windows Equipped Passenger Trains: Test and Validation Antonio Ghelardini , Trenitalia, Italy	Analysis of CWR Buckling Risk Using FEM Jean-François Ferrellec , SNCF Réseau, France	Practical Application of Measures to Prevent Corroded Rail Breakage Using Track Inspection Car Data Toshifumi Tanaka , West Japan Railway Company, Japan	
2:05pm	Forecast of Gaps in Critical Supplies for Rail Innovations. A Pan-European Approach for Resilience Veronica Elena Bocci , DITECFER District for Rail Technologies, High Speed, Networks' Safety & Security, Italy Wolfgang Reimer , GKZ Freiberg, Germany	Digital Twin Modelling of Complex Light Rail Intersection Rob Lambert , Institute of Railway Technology, Monash University, Australia			Early Detection of Short Pitch Corrugation Based on Longitudinal Axle Box Acceleration and Data-driven Approach Pan Zhang , Delft University of Technology, The Netherlands	
2:25pm	BREAK					

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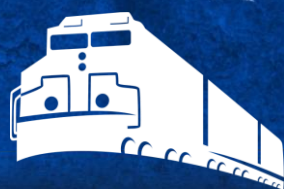
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	AUTOMATIC TRAIN OPERATION & DIGITAL TWIN <i>-Oral-</i>	ARTIFICIAL INTELLIGENCE FOR FAULT DETECTION <i>-Oral-</i>	ENERGY EFFICIENCY <i>-Oral-</i>	OPTIMIZING WHEEL ASSESSMENT & MAINTENANCE <i>-Oral-</i>	INFRASTRUCTURE INSPECTION & MAINTENANCE <i>-Oral-</i>	TECHNOLOGY FOR TRACK MAINTENANCE <i>-Interactive-</i>
2:35pm	Opening Comments by Session Chair Thomas Nast, MxV Rail, USA	Opening Comments by Session Chair Mario Tartaglia, Ferrovie dello Stato Italiane, Italy	Opening Comments by Session Chair André Chamaret, SNCF, France	Opening Comments by Session Chair Mani Entezami, University of Birmingham, UK	Opening Comments by Session Chair Dr Julian Stow, University of Huddersfield, UK	Opening Comments by Session Chair Scott Cummings, MxV Rail, USA
2:40pm	Trustworthy Perception for Automatic Train Operation Temmy Bounedjar, SNCF Réseau, France	Machine Learning Application for Rail Ultrasonic Testing Dr Anish Poudel, MxV Rail, USA	Aerodynamic Optimization of Freight Trains. Part 2: Efficiency and Safety Recommendations from Validated Wind-Tunnel Experiments Dr Alexander Buhr, German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology, Germany Dr James Bell, German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology	Prediction Model for the Optimization of Wheels Reprofile Maintenance Interval: the ETR500 Experience Chiara Triti, Trenitalia, Italy	Developing Critical Indicators for Track Condition Assessment: A Finite Element Study Dr Shushu Liu, US Department of Transportation, Volpe National Transportation Systems Center, USA	Inclination Monitoring of Catenary Poles Luc Malve, SNCF Réseau, France Erwan Dumont, SNCF Réseau, France FRED: Fractal Analysis Approach for Detecting Short-Section Ballast Breakdown in Track with Reduced Window Size Dr Andrea Katharina Korenjak, Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria
3:00pm	A Digital Twin System for Passenger Trainset Life Cycle Costing Abbey Kirkman, Stellenbosch University, South Africa	Rapid Convolutional Neural Network Based DC Series Arc Detection Method for Rail Infrastructure Jack Larkin, University of Nottingham, UK	Analysis of Energy Consumption of the ETR675 Train and Energy Optimization Proposal through a New Automatic Driving Algorithm Lorenzo Del Signore, Nuovo Trasporto Viaggiatori, Italy	Dynamic Rail Wheel Profile Measurement Using Laser Light Technology Anique Phillips, Stellenbosch University, South Africa	Development of Robotic Inspection System for Tunnel Lining Concrete Using Impact Elastic Wave Method Takahiro Maeda, Central Japan Railway Company, Japan	When “Smart-Tamper” Meets “Smart-Rock” Hai Huang, Pennsylvania State University, USA Development of Line-Scanning Infrared Thermography for Rail Base Inspection
3:20pm	“SWiL-RTP”, A New Versatile, “SW in the Loop” Test Environment for “European Vital Computer” and “Automatic Train Operation” Luigi Francesco Caccamo, Italcertifer, Italy	Monitoring System for the Overhead Line Facilities Rinpei Mochizuki, Meidensha Corporation, Japan	AI Based Train Driving Assistance for Energy and Carbon Footprint Reduction Luigi Fratelli, Hitachi Rail STS, Italy	Optimization of Wheelset NDT Inspection Intervals: Results and Outcome from Regional and High Speed Vehicles Cases Steven Cervello, Lucchini, Italy	Railway Track Tamping Effectiveness: Impact of Tamping Parameters and Boundary Conditions Stefan Offenbacher, Graz University of Technology, Austria	Prof James Mathias, Southern Illinois University, USA Optimization of Track Maintenance to Manage RCF using Innovative Software to Prolong Track Life Dr Georg Friberg, Goldschmidt Holding, Germany

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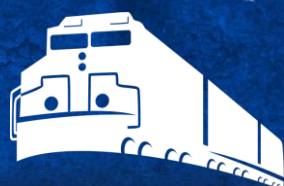
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3:40pm	Project EURAIL – FP2-R2DATO : Coordinating the Research on Autonomous Train Operation in Europe Dr Cedric Gallais , SNCF, France	Real-Time Fault Detection in Freight Train Bogies Using YOLO-Based Deep Learning Model Prof Suraj Prakash Harsha , Indian Institute of Technology Roorkee, India Ankit Kumar , Indian Institute of Technology Roorkee, India	Aerodynamic Optimization of Freight Trains. Part 1: Characterization of Real-world Operation from a Full-scale Measurement Campaign Dr James Bell , German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology, Germany		A New Data-Driven Approach Using Instrumented Wheelsets for Detection of Railway Track Defects Giampaolo Mancini , Italcertifer, Italy	Michael Madden , Orgo-Thermit, USA
4:00pm	BREAK					
	ARTIFICIAL INTELLIGENCE <i>-Oral-</i>	EXTREME WEATHER RESILIENCY <i>-Oral-</i>	RIDE QUALITY <i>-Oral-</i>	VEHICLE/TRACK INTERACTION MODELING & TESTING <i>-Oral-</i>	INFRASTRUCTURE INSPECTION & MAINTENANCE <i>-Oral-</i>	TRACK SUPPORT & STRUCTURES <i>-Interactive-</i>
4:10pm	Opening Comments by Session Chair Luisa Moiso , RSSB, UK	Opening Comments by Session Chair Bertrand Avril , SNCF, France	Opening Comments by Session Chair Cedric Gallais , SNCF, France	Opening Comments by Session Chair Masahiro Tsujie , RTRI, Japan	Opening Comments by Session Chair Erol Tutumluer , University of Illinois Urbana-Champaign, USA	Opening Comments by Session Chair Allan Zarembski , University of Delaware, USA
4:15pm	Development of a 2D Wagon-Track System for Neural Network-Based Detection of Train Wheel Flats Using Numerically Generated Acceleration Signals Michael Savio Perumal , Stellenbosch University, South Africa	An Assessment Tool for Enhancing Railway Organization Resilience Against Unexpected External Events Dr Alfredo Núñez , Delft University of Technology, The Netherlands	Study on the High-Speed train Ride Comfort under Complex Operating Conditions Hanwen Xu , Institute of China Academy of Railway Sciences Corporation Limited (CARS), China	Multibody Simulation of Railway Vehicle-Track Dynamic Interaction for Vibration-Based Substructure Health Monitoring Prof Suraj Prakash Harsha , Indian Institute of Technology Roorkee, India Naveen Narayanan , Indian Institute of Technology Roorkee, India	Easing of Speed Regulations within Shinkansen Turnout Sections following Ballast Renewal, Based on On-site Measurement and Simulation Ryo Iwami , East Japan Railway Company, Japan	DynaNOR - Dynamic In-Situ Measurements of Slab and Ballast Tracks in Norwegian Tunnels Thomas Gabernig , Institute of Railway Infrastructure Design, Graz University of Technology, Austria Molecular Dynamics Model of Asphalt Overlayment-Crosstie Interface Ramez Hajj , University of Illinois Urbana-Champaign, USA
4:35pm	Predicting Train Door Failures Using Machine Learning Techniques Nelisa Mabaso , Stellenbosch University, South Africa	Supporting Proportionate Operational Mitigation of Extreme Weather Events using a Whole System Approach Vincent Ganthy , RSSB, UK	Track, Freight, Passenger: A Unified Approach to Identifying Rough Rides and Improving Performance Prof Yann Bezin , University of Birmingham, UK	Correlation Between Asymmetric Rail Profiles and Rate of Wear as seen in Indian Railways Based on Large Scale Implementation of Rail Grinding	A Method for Mitigating Concept Drift in Unsupervised Anomaly Detection: Implementation and Empirical Evaluation in Railroad Machinery Diagnostics	Ballast Reclamation Characterization Dr Stephen Wilk , MxV Rail, USA

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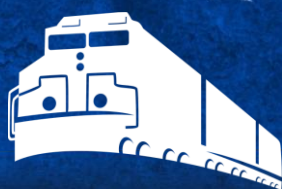
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			Dr Mani Entezami , University of Birmingham, UK Edwin Cornish , Eurostar, UK	Ashish Bansal , Indian Railways, Ministry of Railways, India Jainendra Kumar Singh , Research Design Standards Organisation, Ministry of Railways, India	Takenori Murata , Central Japan Railway Company, Japan	An Innovative Reliable and Easy to Install Ballastless System Dr Andrea Bracciali , University of Florence, Italy Assessing Pathology Risk in Concrete Structures using Monte Carlo Simulations and Machine Learning Nam-Ngia , SNCF Réseau, France
4:55pm	Predictive Analysis of Railway Asset Regeneration Using AI Amira Youssef , SNCF Réseau, France	Developing a Method for Real-time Mapping of Maximum Instantaneous Wind Speeds Keita Saito , Toshiba Energy Systems & Solutions Corporation, Japan	Characterising the Dynamic Comfort Properties of Passenger Rail Vehicle Seats Dr Julian Stow , Institute of Railway Research, University of Huddersfield, UK	Assessment of the Wheel-Rail Interaction Behaviour of the Embedded Rail System for the Runnability Analysis of Messina Bridge Marcella Di Mario , Stretto di Messina, Italy Marco Cerullo , Stretto di Messina, Italy	Automated Condition-based Tamping Process: From Research to Product Dr Christian Koczwara , Plasser & Theurer, Austria	
5:15pm		Evaluation of Railway Vehicle Resistance to Crosswinds and Accuracy Enhancement through Environmental Change Detection Dr Yayoi Misu , East Japan Railway Company, Japan	The Coefficient of Friction and Its Role in the Safety and Comfort of a Passenger Car: A Rigid-Flexible Model Approach Dr Leonardo Bartalini Baruffaldi , Instituto Federal de São Paulo, Brazil Vinicius de Galiza Vieira , Universidade Estadual de Campinas, Brazil	An Electromechanical Sensitivity Analysis for Real-time Adhesion Estimation of an Electric Locomotive Prof Zili Li , Delft University of Technology, The Netherlands Dr Alfredo Núñez , Delft University of Technology, The Netherlands	Implementation of a Digital Twin in Modern Routine Maintenance Finbar Holland , Agonics, Australia	
5:35pm	CLOSE OF CONFERENCE SESSIONS					
6:30pm - 9.30pm	GALA DINNER Sponsored by Plasser & Theurer Plasser & Theurer					

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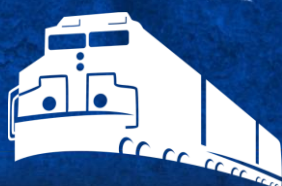
8:00am

MORNING COFFEE AND NETWORKING

WCRR PARALLEL TECHNICAL SESSIONS

	ALTERNATIVE ENERGY SOURCES <i>-Oral-</i>	CONDITION BASED MONITORING & MAINTENANCE <i>-Oral-</i>	PASSENGER SATISFACTION <i>-Oral-</i>	SIGNAL SYSTEM MANAGEMENT <i>-Oral-</i>	CATENARY POWER <i>-Oral-</i>	DESIRABLE & GREEN RAILWAYS <i>-Interactive-</i>
8:30am	Opening Comments by Session Chair Paolo Masini , Trenitalia, Italy	Opening Comments by Session Chair Dr Yann Bezin , University of Birmingham, UK	Opening Comments by Session Chair Tony Sultana , MxV Rail, USA	Opening Comments by Session Chair David Staplin , Retired Amtrak, USA	Opening Comments by Session Chair Yu-Jiang Zhang , Federal Railroad Administration, USA	Opening Comments by Session Chair Gianluca Giacco , Trenitalia, Italy
8:35am	Holistic Modeling and Optimization of Hydrogen- Powered Trains for Zero-Emission Railway Operation Moritz Schenker , German Aerospace Center (DLR), Institute of Vehicle Concepts, Germany Steffen Wieser , German Aerospace Center (DLR), Institute of Vehicle Concepts, Germany	CBM Algorithms for the Indirect Recognition of Battery Charger Failure Modes Alfredo Biancucci , Trenitalia, Italy	Indoor Positioning Challenges: Integrating UWB and 5G Technologies for Enhanced Navigation Support in Railway Stations Nerea Canales Sebastian , Rete Ferroviaria Italiana (RFI), Italy	Development of a Signaling Equipment Inspection System from Onboard Cameras and Sensors Riho Maeda , Railway Technical Research Institute (RTRI), Japan	A Simplification Method for Harmonic Overvoltage Analysis of The Railway Infrastructure and The Rolling Stock Frederic Deheuvels , SNCF Voyageurs - CIM TEA2, France	Energy Efficiency Rating of a Railway Track Dr Qing Wu , Centre for Railway Engineering, CQUniversity, Australia Innovative Renewable Energy Solutions for Sustainable Railway Guido Guidi Buffarini, Italferr, Italy
8:55am	Options for Decarbonizing Commuter Rail on a Freight Corridor - a Case Study in Central Texas Rydell Walthall , University of Texas at Austin, USA	How Sata and Predictive Analytics have Facilitated the Shift from Systematic Preventive Maintenance to Condition-based Maintenance for SNCF Rolling Stock Pierre Audier , SNCF Voyageurs, France Cyril Verdun , SNCF Voyageurs, France	Indoor Passenger Flow and train Platforming Optimization Dr Giovanni Luca Giacco , Trenitalia, Italy	Research and Application of Intelligent Safety Operation and Maintenance of Railway Signalling System Prof Yang Zhao , Signal & Communication Research Institute, China Academy of Railway Sciences (CARS), China	Development of Overhead Contact Line Inspection Devices for Shinkansen at High Speed Running Ryo Kuriki , Central Japan Railway Company, Japan	Comprehending the Freight behavior and Elucidating the Mechanism of Abrasion Damage to Corrugated Boxes during Rail Transport Yasuhiro Umehara , Railway Technical Research Institute (RTRI), Japan
9:15am	Energy and Cost Optimization of Alternative drive Trains from System Perspective André Chamaret , SNCF Voyageurs, France	An Innovative Modular and Integrated Monitoring System for Anomalies Detection in Freight Wagons Steven Cervello , Lucchini, Lucchini, Italy	Estimation of the Number of Passengers by Age Group in Regional Railways Takuya Watanabe , Railway Technical Research Institute (RTRI), Japan	Certification Approach for Innovative Product and System Development. How to Manage Third Part Evaluation for Innovative Technologies in Railway Signaling in a Framework of Interoperability	Development of a High-Speed and High-Accuracy Wear Measurement Device for Unevenly Worn Contact Wire Hiromu Susuki , Railway Technical	Advancing Rail Freight with ASINO, a Compact Drive System for Individual Cars David Krüger , German Aerospace Center (DLR), Germany

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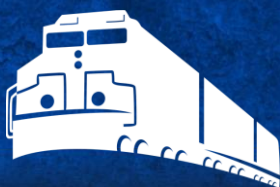
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		Federico Zanelli , Politecnico di Milano, Italy		Carmine Zappacosta , Italcertifer, Italy Alessandro Basili , Bureauveritas Italia, Italy	Research Institute (RTRI), Japan	
9:35am	Authorization Experience in Hydrogen Train Test on the Spanish Railway Network Inés Cortázar , Adif, Spain	Condition-based Monitoring for Maintenance of Rolling Stocks Amit Kumar , Research Design Standard Organisation (RDSO), Ministry of Railways, Government of India Amit Srivastava , Research Design Standard Organisation (RDSO), Ministry of Railways, Government of India	Energy Demand for Air Conditioning in Rail-bound Intermodal Pod-Systems Linus Brünner , German Aerospace Center (DLR), Institute of Vehicle Concepts, Germany	A Minimal Hardware-in-the-Loop Architecture for Railway Signaling Systems Testing Marco Barbaro , Politecnico di Milano, Italy #932	Applicability of Contact Wire Splices for Shinkansen Overhead Contact Lines Taku Nakamura , Railway Technical Research Institute (RTRI), Japan	
9.55am	BREAK					
	COMMUNICATIONS & TRAIN CONTROL -Oral-	BRAKING PERFORMANCE -Oral-	OPTIMIZATION IN ROUTING & OPERATION -Oral-	RAIL PERFORMANCE -Oral-	COUPLING SYSTEMS -Oral-	RESILIENCY AND CLIMATE ISSUES -Interactive-
10:05am	Opening Comments by Session Chair Edouard Chabanier SNCF, France	Opening Comments by Session Chair Ronald Sellberg , RPS Consulting, USA	Opening Comments by Session Chair Dr Anish Poudel , MxV Rail, USA	Opening Comments by Session Chair Nigel Peters , Nigel Peters Professional Services, USA	Opening Comments by Session Chair Devin Sammon , MxV Rail, USA	Opening Comments by Session Chair Christopher Johnson , MxV Rail, USA
10:10am	Implementation of Gap Control for Virtually Coupled Trains Using 5G Communication Byung-Hun Lee , Korea Railroad Research Institute, Republic of Korea	Simulation-based Verification of Braking Distance Controllability under shunting trains conditions Yuta Kizaki , Railway Technical Research Institute (RTRI), Japan	Explaining Decision-Making in Railway Route Decision Using SHAP And Machine Learning Hao Ni , Birmingham Centre for Railway Research and Education, UK	Influence of Rail Steel Grade on Rail Wear in tight Curves Julia Egger , Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria	Powerline PLUS Train Backbone for the Full Digital Freight Train Stephen Dominiak , plc-tec, Switzerland	Utilization of External High-density Seismic Data for Railway Operation after Earthquake Haruka Ishii , East Japan Railway Company, Japan Wolfgang Schuster , PRODES, Austria
10:30am	A Real-Time Monitoring Technique for Millimeter-Wave Train Radio System on High-Speed Train Tomoyuki Tange , Central Japan Railway Company, Japan	Performance Evaluation of Brake Friction Materials Using Cutting Force Measurement Hisanori Nishimori , Railway Technical Research Institute (RTRI), Japan	Towards Optimal Operation of Novel Railway Traction Systems Dr Rabee Jibrin , University of Birmingham, UK	Research of rail corrugation in the Kaohsiung Light Rail Line I-Hsien Wang , National Kaohsiung University of Science and Technology, Department of Civil Engineering, Taiwan	Assessment of the Derailment Safety of the Digital Automatic Coupler in Europe Dr Daniel Jobstfinke , DB Systemtechnik, Germany	Modelling the Impact of Railway Infrastructures on Species Migrations in the Context of Climate Change Page Jean-Baptiste , Université Paris-Saclay, CentraleSupélec, France

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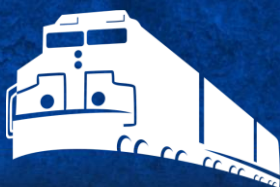
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10:50am	Interoperable Approach to PTC Enforcement of Restricted Speed Rules via Emerging Mobile Sensing Technology Thomas Nast, MxV Rail, USA	Safety of High-Speed EMU Under the Extreme Braking Condition Jingcheng Wen, China Academy of Railway Sciences Company Limited (CARS), China	Calculating Accurate Freight Pathing Times on the GB Network Dr Aaron Rostron-Barrett, RSSB, UK	Strength Evaluation of Rails and Round Bar Fastening Systems Under Conditions of Repeated Train Run at Rail Breakage Dr Yuki Nishinomiya, Railway Technical Research Institute (RTRI), Japan	Wire Arc Additive Weld Repair of Cast Knuckles to Reduce Corrosion and Fatigue Failures Dr Paul Sanders, Michigan Technological University, USA	National Alert System for the Prediction of the Possible Triggering of Rain-induced Landslides along the RFI Railway Infrastructure Ivan Agostino, Ferrovie dello Stato Italiane, Rete Ferroviaria Italiana, Italy Alessandro Rinaldi, Ferrovie dello Stato Italiane, Rete Ferroviaria Italiana, Italy
11:10am	BREAK					
	MONITORING METHODS TO REDUCE RISK <i>-Oral-</i>	BRAKING & WHEELS <i>-Oral-</i>	OPTIMIZATION IN ENERGY USE & OPERATION <i>-Oral-</i>	RAIL & WELDS <i>-Oral-</i>	ASSET MANAGEMENT FOR INFRASTRUCTURE <i>-Oral-</i>	WHEEL/RAIL ADHESION <i>-Interactive-</i>
11:20am	Opening Comments by Session Chair Jessica Wieder, BNSF Railway, USA	Opening Comments by Session Chair Corey Pasta, MxV Rail, USA	Opening Comments by Session Chair David de Almeida, SNCF, France	Opening Comments by Session Chair Dr Gary Fry, Fry Technical Services, USA	Opening Comments by Session Chair Andy Doherty, GCRE, UK	Opening Comments by Session Chair Giampaolo Mancini, Italcertifer, Italy
11:25am	The Effect of Droughts on railways: Studying Railway Deformations before, during, and after the Summer of 2018 Drought in Sweden using Satellite Radar Products Frida Carlvik, Lund University, Sweden	Design of a WSP System to Improve the Safety and Reduce Maintenance Costs of a 3-bogie Articulated Freight Wagon Francesco Mazzeo, Politecnico di Milano, Italy	Large Scale Nonlinear Timetable Optimization based on Time-dependent Passenger Demand Dr Giovanni Luca Giacco, Trenitalia, Italy	Fatigue Testing of Rails with Detected Defects Under Simulated Loads Dr Ananyo Banerjee, MxV Rail, USA	Developing a Heavy Axle Weight Infrastructure Interaction Model for Rail Freight Traffic John Armstrong, University of Southampton, UK	Effect of Worn Wheel Tread on Traction/Braking Performance of Railway Vehicles under Wet Conditions Dr Daisuke Yamamoto, Railway Technical Research Institute (RTRI), Japan
11:45am	Development of Derailment Detection Method for Freight Cars using Contact Sensors Kazuto Kosugi, Japan Freight Railway Company, Japan	Study of the Thermo-mechanical Damage in Steels for Tread-braked Railway Wheels using Innovative Small-scale Tests Lorenzo Ghidini, Lucchini, Italy	Enhanced Overlay-PTC and Quasi Moving Block Capacity Case Study Xu Li, MxV Rail, USA Mohamad Khater, MxV Rail, USA	Effect of Cementite Decomposition on the Formation of White Etching Layer and Design of WEL-Resistance Pearlitic Rail Steels Jiapeng Liu, Metals and Chemistry Research Institute, China Academy of Railway Sciences (CARS), China	Pursuing Whole System Decision-Making in Railways Asset Management Adalberto Polenghi, Politecnico di Milano, Italy	White Etching Layer Formation on Wheel and Rails During Braking under Changing Adhesion Conditions Dr Samuel Hawksbee, Institute of Railway Research, University of Huddersfield, UK

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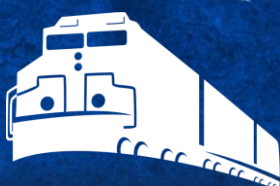
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12:05pm		Wheel Design Worst Case Scenario Assessment Tore Vernersson , Chalmers Railway Mechanics, Sweden #1059	Development of a Railway Consumption Estimation Tool for Energy Metering on Non-metered Rolling Stock Dr Hamou Benhabib , SNCF Réseau, France	Thermal Deformation Analysis for Gas Pressure Welding of Rail Hajime Ito , Railway Technical Research Institute (RTRI), Japan		Development of Slip Re-adhesion Control for Bogie-controlled Locomotives and Efforts Toward Automation of Driving Operations Yoshiki Uno , Japan Freight Railway Company, Japan
12:25pm	LUNCH, EXHIBITION NETWORKING AND IHHA ePOSTERS					
	ATO & TRAIN POSITIONING <i>-Oral-</i>	CONDITION BASED MONITORING & MAINTENANCE <i>-Oral-</i>	ECONOMICS & ENVIRONMENTAL SUSTAINABILITY <i>-Oral-</i>	INFRASTRUCTURE INSPECTION <i>-Oral-</i>	STANDARDS & REGULATIONS <i>-Oral-</i>	ARTIFICIAL INTELLIGENCE & TECHNOLOGY <i>-Interactive-</i>
1:35pm	Opening Comments by Session Chair Alejandro Gonzalez-Ruiz , MxV Rail, USA	Opening Comments by Session Chair Clemente Guerriero , Trenitalia, Italy	Opening Comments by Session Chair Pinar Yilmazer , International Union of Railways (UIC), France	Opening Comments by Session Chair Dr Adam Bevan , University of Huddersfield, UK	Opening Comments by Session Chair Scott Cummings , MxV Rail, USA	Opening Comments by Session Chair Franck Poisson , SNCF, France
1:40pm	The Role of Continuity Attribute for Train Positioning Technologies Based on GNSS and ERTMS Dr Aleš Filip , University of Pardubice, Czech Republic	Telediagnosis of Engine Oil Dr Camella Oumahi , SNCF, France	System for Financial Optimization of Corporate Investments (SOFIA): Advanced Approaches for Allocating Funds to Railway Infrastructure Projects Dr Giuseppe Carcasi , Rete Ferroviaria Italiana (RFI), Italy Alessandro Antonelli , Rete Ferroviaria Italiana (RFI), Italy	Development of Efficient Image Inspection Method for Rail fastening Systems using Line Sensor Images Hisashi Yoshida , East Japan Railway Company, Japan Shousuke Hirohata , East Japan Railway Company, Japan	The Migration Strategy: From EN to ISO Standards, Use Case of Fire Safety Standards for Rolling Stocks Guillaume Craveur , SNCF Voyageurs, France	Research on Key Technology of High-Speed Maglev Railway at 600 km/h Hongmei Li , China Academy of Railway Sciences (CARS), China Research on Key Technologies for Intelligent Operation and Maintenance of High Speed Rail Infrastructure Integrating Big Data with Artificial Intelligence
2:00pm	Design and Organisation of Unmanned Rolling Stock Tests Thierry Lemaréchal , SNCF Voyageurs, Rolling Stock Engineering Department, Railway Testing Agency, France	Development and Testing of a Wireless Communication System for Freight Wagons Filippo Moretti , Mercitalia Intermodal, Italy	Enhancing Sustainability: A Decision-Making Tool for Circular Economy in Railway Power Supply Quentin Levy-Abegnoli , SNCF Réseau, France	Development of OCL Imaging and 3-dimensional Structure Measurement Technology for Shinkansen Itaru Matsumura , Railway Technical Research Institute (RTRI), Japan	Standardizing Automated Configuration Management for Railway Systems through Technical Regulation Dr Karl-Albrecht Klinge , Mainz University of Applied Sciences, Germany	Research on Key Technologies for Intelligent Operation and Maintenance of High Speed Rail Infrastructure Integrating Big Data with Artificial Intelligence Dr Congxu Li , Institute of Computing Technology, China Academy of Railway Sciences (CARS), China Hanming Jing , Institute of Computing Technology, China Academy of Railway

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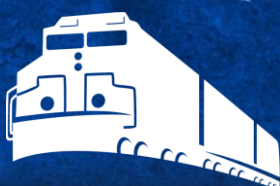
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COLORADO SPRINGS, CO USA | NOVEMBER 17-21, 2025

2:20pm	Resilience of Cooperative Train Positioning against GNSS System Failure Enki Saura, IKOS Lab, France	Effect of Extended Bearing Inactivity on Lubricating Grease Characteristics and Performance Dr Robert Jones, University of Texas Rio Grande Valley, USA	Evaluation of Sustainability in Infrastructures through EPD Certifications, Peculiarities and Possible Future Developments Andrea Vecchi, Rete Ferroviaria Italiana (RFI), Italy	Optimized Track Geometry Maintenance in Paris area (France) based on Data Collected by In-Service Passenger Trains Oriane Didry, SNCF Réseau, France	Development of International Standards for Railway Operations and Services Daisuke Tatsui, Railway Technical Research Institute (RTRI), Japan	Sciences (CARS) , China Guiding Visually-Impaired Passengers: A Review of AI and Computer Vision-Based Applications Matthieu Leveque, SNCF Voyageurs, France Dr Claire Nicodeme, France Method to Adapt Stereo Visual Odometry from Road to Railway Applications Malick Kandji, SNCF Voyageurs & Univ Gustave Eiffel, COSYS-LEOST, France Cedric Lelionnais, SNCF Voyageurs, France Exploring the use of Scenario Based Validation for Q-Learning Algorithms Deployed for Railway Traffic Management Krishnan Guruvayur Venkateswaran, University of Birmingham, UK
2:40pm	Interoperable Approach to PTC Enforcement of Restricted Speed Rules Wesley DeMonia, MxV Rail, USA		Life Cycle Information Models, Proof of Concept LCA Tool and Sensitivity Analysis of Embodied Carbon and Emissions of Railway Track Maintenance Activities Dr Pasi Lautala, Michigan Technological University, USA	Developing a New Track Monitoring Method Based on Acceleration Measurements by Smartphones Huyen Nguyen, SNCF Réseau, France		
3:00pm	BREAK & EXHIBITION NETWORKING					
CLOSING CEREMONY						
3:30pm	Turning Ideas into Impact: How Supplier Leadership is Shaping the Rail Industry’s Future <i>Stay tuned for more details</i> Next IHHA + WCRR Conference Announcements Awards and Closing Remarks					
5:35pm	CLOSE OF CONFERENCE SESSIONS					

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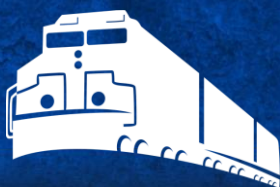
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FRIDAY NOVEMBER 21, 2025 OFFICIAL TECHNICAL SITE TOUR	
07:30am	MxV Rail PuebloPlex Tour and Track Walk at FAST®
7:30am	Safety Briefing Depart The Broadmoor for MxV Rail, PuebloPlex
10:00am	FAST® Loop Track Walk Demonstrations at Impact Wall/Track and Security and Emergency Response Training Center's (SERTC) AFFIRM scenario Tour MxV Rail Laboratory Building Lunch and Networking
3:30pm	Return to The Broadmoor

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