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**

Click here to view latest updates on the event website

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

WCRR PARALLEL TECHNICAL PAPERS

	VEHICLE/TRACK INTERACTION MODELLING & TESTING *-Oral-*	DERAILMENT RISK, MITIGATION & DETECTION *-Oral-*	ENVIRONMENTAL SUSTAINABILITY *-Oral-*	TRACK BUCKLING *-Oral-*	SPECIAL TRACKWORK *-Oral-*	INSPIRING THE FUTURE OF RAIL TRANSPORT *-Interactive-*
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: Spotlighting 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		**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 **Michael Sehner,** Getzner Werkstoffe, 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	

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

		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 *-Oral*	**PASSENGER HEALTH** *-Oral-*	**DETECTION OF WHEEL ISSUES** *-Oral-*	**TRACK RATING, CONSTRUCTION, & REGULATION** *-Oral-*	**INFRASTRUCTURE PERFORMANCE, INSPECTION, & MONITORING** *-Oral-*	**OPTIMIZATION & ENERGY EFFICIENCY** *-Interactive-*
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** *Stay tuned*	**Opening Comments by Session Chair** **Dr Marco Sacchi,** Hitachi Rail, Italy

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

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 Rrossings 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 **Integration of Signaling data into Real-Time Eco-driving Algorithms for Regional Trains** **Dr Vincenzo Galdi,** Department of Industrial Engineering - University of Salerno, Italy
	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	
	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	

[Click here to view latest updates on the event website](#)

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

	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 *-Oral-*	**MAGNETIC LEVITATION** *-Oral-*	**VIBRATION & NOISE** *-Oral-*	**CROSSTIES/ SLEEPERS** *-Oral-*	**BRIDGES & TUNNELS** *-Oral-*	**OPERATIONAL SAFETY** *-Interactive-*
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** *Stay tuned*	**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

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

				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 **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 **Improving Drivers' Performance via Automatic Driver Competency Indicators** **Marcus Carmichael,** RSSB, UK
	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 Chuo 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	
		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		
5:35PM	**CLOSE OF CONFERENCE SESSIONS**					
5:35PM-7:00PM	**EXHIBITION NETWORKING RECEPTION** *Available to sponsor*					

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

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 Moisio,** 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 *-Oral-*	COMMUNICATIONS & TRAIN CONTROL *-Oral-*	OPTIMIZATION & ENERGY EFFICIENCY *-Oral-*	WEATHER & CLIMATE CHALLENGES *-Oral-*	VEHICLE TRACK INTERACTION *-Oral-*	SAFE & OPTIMIZED FIXED ASSETS *-Interactive-*
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	**Indoor Passenger Flow and train Platforming Optimization** **Dr Giovanni Luca** Giacco, Trenitalia, Italy	**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

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

	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** **Dr Mami Matsumoto,** Railway Technical Research Institute (RTRI), Japan **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
	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,** SOGEI, Italy	**Energy Saving Tramway Amsterdam** **Remco Paulussen,** Railwaysafe, The Netherlands	**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	
10:45am	**BREAK**					
	RADIO COMMUNICATION *-Oral-*	**RISK ASSESSMENT & MANAGEMENT** *-Oral-*	**AERODYNAMICS & NOISE** *-Oral-*	**SAFETY ASSESSMENT & DERAILMENT MITIGATION** *-Oral-*	**ROLLING CONTACT FATIGUE** *-Oral-*	**TESTING & STANDARDS** *-Interactive-*
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

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

	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, Republc 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 *-Oral-*	**DIGITAL TWIN** *-Oral-*	**PASSENGER HEALLTH & HAPPINESS** *-Oral-*	**TRACK BUCKLING** *-Oral-*	**INFRASTRUCTURE INSPECTION** *-Oral-*	**ROLLING STOCK SAFETY & RELIABILITY** *-Interactive-*
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

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

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 Rizz** 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,** Trenatalia, Italy **Chiara Triti,** Trenatalia, Italy **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**, Trenatalia, Italy **Multiphysics Modelling of an Autonomous Transportable Inspection Trolley** **Luca Ricciardi,** Rete Ferroviaria Italiana (RFI), Italy **Andrea Strino,** Rete Ferroviaria Italiana (RFI), 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	
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 Ferellec,** 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**					

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

	AUTOMATIC TRAIN OPERATION & DIGITAL TWIN *-Oral-*	ARTIFICAL INTELLIGENCE FOR FAULT DETECTION *-Oral-*	ENERGY EFFICIENCY *-Oral-*	OPTIMIZING WHEEL ASSESSMENT & MAINTENANCE *-Oral-*	INFRASTRUCTURE INSPECTION & MAINTENANCE *-Oral-*	TECHNOLOGY FOR TRACK MAINTENANCE *-Interactive-*
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** **Juline Lhullier,** SNCF Voyageurs, France	**Machine Learning Application for Rail Ultrasonic Testing** **Dr Anish Poudel,** MxV Rail, USA	**AI Based Train Driving Assistance for Energy and Carbon Footprint Reduction** **Luigi Fratelli,** Hitachi Rail STS, Italy	**Prediction Model for the Optimization of Wheels Reprofiling 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 **When "Smart-Tamper" Meets "Smart-Rock"** **Hai Huang,** Pennsylvan State University, USA **Development of Line-Scanning Infrared Thermography for Rail Base Inspection** **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 **Michael Madden,** Orgo-Thermit, USA
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	
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	**Aerodynamic Optimization of Freight Trains. Part 1: Characterization of Real-world Operation from a Full-scale Measurement Campaign** **Dr Alexander Buhr,** German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology, Germany	**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	
3:40pm	**Project EURAIL – FP2-R2DATO : Coordinating the Research on Autonomous Train Operation in Europe**	**Real-Time Fault Detection in Freight Train Bogies Using YOLO-Based Deep Learning Model** **Prof Suraj Prakash Harsha,** Indian	**Aerodynamic Optimization of Freight Trains. Part 2: Efficiency and Safety Recommendations from Validated**		**A New Data-Driven Approach Using Instrumented Wheelsets for Detection of Railway Track Defects**	

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

	Dr Cedric Gallais, SNCF , France	Institute of Technology Roorkee, India **Ankit Kumar,** Indian Institute of Technology Roorkee, India	**Wind-Tunnel Experiments** **Dr Alexander Buhr,** German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology, Germany		**Giampaolo Mancini,** Italcertifer, Italy	
4:00pm	**BREAK**					
	ARTIFICAL INTELLIGENCE *-Oral-*	**EXTREME WEATHER RESILIENCY** *-Oral-*	**RIDE QUALITY** *-Oral-*	**VEHICLE/TRACK INTERACTION MODELING & TESTING** *-Oral-*	**INFRASTRUCTURE INSPECTION & MAINTENANCE** *-Oral-*	**TRACK SUPPORT & STRUCTURES** *-Interactive-*
4:10pm	**Opening Comments by Session Chair** **Luisa Moisio,** 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	**Unified Track Quality Index Using Remotely Sensed Dataset and Geometry Measurements** **Abdul-Rashid Zakaria,** University of Mississippi, USA	**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	**Investigating Gauge Narrowing in Norwegian Slab Track Tunnels: Evidence from Dynamic In-Situ Measurements** **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 **Ballast Reclamation Characterization** **Dr Stephen Wilk,** MxV Rail, USA **An Innovative, Reliable and Easy to Install Ballastless System** **Dr Andrea Bracciali,** University of Florence, Italy
4:35pm	**Predictive Analysis of Railway Asset Regeneration Using AI** **Amira Youssef,** SNCF Réseau, France	**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 **Dr Mani Entezami,** University of Birmingham, UK **Edwin Cornish,** Eurostar, UK	**Correlation Between Asymmetric Rail Profiles and Rate of Wear as seen in Indian Railways Based on Large Scale Implementation of Rail Grinding** **Ashish Bansal,** Indian Railways, Ministry of Railways, India **Jainendra Kumar Singh,** Research Design Standards	**A Method for Mitigating Concept Drift in Unsupervised Anomaly Detection: Implementation and Empirical Evaluation in Railroad Machinery Diagnostics** **Takenori Murata,** Central Japan Railway Company, Japan	

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

				Organisation, Ministry of Railways, India		**Assessing Pathology Risk in Concrete Structures using Monte Carlo Simulations and Machine Learning** **Nam-Ngia,** SNCF Réseau, France
4:55pm	**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	**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** **Eugenio Fedeli,** Stretto di Messina, Italy	**Automated Condition-based Tamping Process: From Research to Product** **Dr Christian Koczwara,** Plasser & Theurer, Austria	
5:15pm	**Predicting Train Door Failures Using Machine Learning Techniques** **Nelisa Mabaso,** Stellenbosch University, South Africa	**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 **Vinícius 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					

[Click here to view latest updates on the event website](#)

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

THURSDAY NOVEMBER 20, 2025						
8:00am	MORNING COFFEE AND NETWORKING					
WCRR PARALLEL TECHNICAL SESSIONS						
	ALTERNATIVE ENERGY SOURCES *-Oral-*	**CONDITION BASED MONITORING & MAINTENANCE** *-Oral-*	**PASSENGER SATISFACTION** *-Oral-*	**SIGNAL SYSTEM MANAGEMENT** *-Oral-*	**CATENARY POWER** *-Oral-*	**DESIRABLE & GREEN RAILWAYS** *-Interactive-*
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	**Study of the Mechanical Properties of Recycled Pure Copper from Contact Wires** **Kadir Gok,** Univ. Lille, CNRS, 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 **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 **Measuring EMC impact of a High Power Energy link**
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	**Energy Demand for Air Conditioning in Rail-bound Intermodal Pod-Systems** **Linus Brünner,** German Aerospace Center (DLR), Institute of Vehicle Concepts, Germany	**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	
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	

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

		Federico Zanelli, Politecnico di Milano, Italy		**Carmine Zappacosta,** Italcertifer, Italy **Alessandro Basili,** Bureauveritas Italia, Italy	Research Institute (RTRI), Japan	**along Railway Infracture in the Eurotunnel: Lessons and Perspectives** **Juan-José Munoz-Vargas,** SNCF Réseau, France
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		**A Minimal Hardware-in-the-Loop Architecture for Railway Signaling Systems Testing** **Marco Barbaro,** Politecnico di Milano, Italy	**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**

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

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 *-Oral-*	**BRAKING & WHEEELS** *-Oral-*	**OPTIMIZATION IN ENERGY USE & OPERATION** *-Oral-*	**RAIL & WELDS** *-Oral-*	**ASSET MANAGEMENT FOR INFRASTRUCTURE** *-Oral-*	**WHEEL/RAIL ADHESION** *-Interactive-*
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** **Sharon Odetunde,** RSSB, 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** **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
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	

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

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 *-Oral-*	**CONDITION BASED MONITORING & MAINTENANCE** *-Oral-*	**ECONOMICS & ENVIRONMENTAL SUSTAINABILITY** *-Oral-*	**INFRASTRUCTURE INSPECTION** *-Oral-*	**STANDARDS & REGULATIONS** *-Oral-*	**ARTIFICIAL INTELLIGENCE & TECHNOLOGY** *-Interactive-*
1:35pm	**Opening Comments by Session Chair** **Alejandro Gonzalez-Ruiz,** MxV Rail, USA	**Opening Comments by Session Chair** **Clemente Guerriero,** Trenatalia, 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** **Dr Congxu Li,** Institute of Computing Technology, China Academy of Railway Sciences (CARS) , China **Hanming Jing,** Institute of Computing Technology, China Academy of Railway
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	

[Click here to view latest updates on the event website]

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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** *Stay tuned for more details* **Next IHHA + WCRR Conference Announcements** **Awards and Closing Remarks**					
5:35pm	**CLOSE OF CONFERENCE SESSIONS**					

[Click here to view latest updates on the event website](#)

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL

WCRR 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

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

This preliminary program is subject to further changes. Visit the event website to view and download the latest version.

Click here to view latest updates on the event website

Preliminary Program – Subject to Changes
Version dated – Oct 01, 2025

Hosted by MxV RAIL