

IHHA 2025

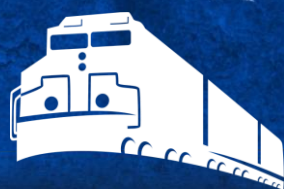
2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

MONDAY NOVEMBER 17, 2025 | IHHA WORKSHOP

7:00am	MORNING COFFEE, NETWORKING & REGISTRATION
	Session 1 - Prepare Track/Infrastructure for Environmental Impacts
8:00am	Welcome and Opening Comments by Session Moderator Dr Dingqing Li, MxV Rail, USA
8:05am	Overview of Environmental Impacts and Sustainability Related to Rail Prof Andrew Quinn, University of Birmingham, UK
8:35am	Track Requirements Supporting Railways 4.0 Prof Hannes Gräbe, University of Pretoria, South Africa
9:05am	Track Support Repair and Reinforcement Prof Ted Sussmann, University of Hartford, USA
9:35am	COFFEE BREAK & NETWORKING
10:00am	Track Buckling Due to Extreme Heat and Prevention Dr Steve Wilk, MxV Rail, USA
10:30am	Track Maintenance Methods for Stronger and More Sustainable Track from Supplier's Perspective (rails) Chris Lidberg, Loram, USA
11:00am	Track Maintenance Methods for Stronger and More Sustainable Track from Supplier's Perspective (ballast and subgrade) Dr Fabian Hansmann, Plasser & Theurer, Austria
11:30am	Track Maintenance Methods for Stronger and More Sustainable Track from Railroad Perspective Antonio Merheb, MRS Logistica, Brazil
12:00pm	LUNCH & NETWORKING
	Session 2 - Railroads Journey of Alternative Power and Changes in Train Handling
1:00pm	Welcome and Opening Comments by Session Moderator Maureen Werner, MxV Rail, USA
1:05pm	Power/Alternative Energy Josh Raglin, Norfolk Southern, USA
1:25pm	Power/Alternative Energy Anelise Salzani, MRS Logistica, Brazil
1:45pm	Longer Trains, DP Units Wynard Botha, Transnet Freight Rail, South Africa
2:25pm	AAR Interchange, NA Railroad and Economics Update Association of American Railroads (AAR), USA
3:05pm	COFFEE BREAK & NETWORKING
	Session 3 - Train Control at Various Countries
3:35pm	Welcome and Opening Comments by Session Moderator Joe Brosseau, MxV Rail, USA
3:40pm	Australia Approach to Train Control and Automation in Heavy Haul Operations Leland LeBreton, Rio Tinto, Australia
4:05pm	United States approach to Train Control and Automation in Heavy Haul Operations Ed Tilley, FTW Associates at Fossil Creek, USA
4:30pm	South Africa Approach to Train Control and Automation in Heavy Haul Operations <i>Stay tuned for further announcements</i>
4:55pm	Brazil Approach to Train Control and Automation in Heavy Haul Operations Arnaldo Soares, MRS Logistica, Brazil
5:20pm	Panel Session on Train Control and Automation in Heavy Haul Operations All + Paulo Vieira, PxV Rail Consulting, USA
5:40pm	IHHA WORKSHOP CONCLUSION

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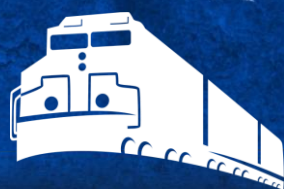
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5:30pm-7:30pm	WELCOME COCKTAIL FUNCTION <i>Available to sponsor</i>
TUESDAY NOVEMBER 18, 2025	
08:00am	MORNING COFFEE & NETWORKING
08:30am	OPENING CEREMONY
	Welcome Ceremony and Address Kari Gonzales, Chair, IHHA + President & CEO, MxV Rail, USA Keynote 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 & 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 & IHHA ePOSTERS
12:20pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL
	Low-cost Automated, Continuous Natural Vibration Structural Analysis using AI Graham Sutherland, Canetia, USA Evaluation of the Structural Behavior of the Olifants River Viaduct Emilia Joyce Mupwedi, University of Cape Town, South Africa Structural assessment of Railway Viaducts: Challenges and Solutions for Concrete Expansive Reactions Carolina Lourenço Santiago, MRS Logística, Brazil

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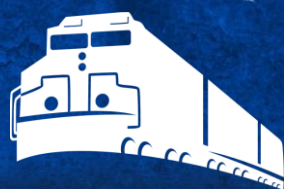
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	Compressor Brake Wagon Innovation Advancing Offloading Efficiency and Safety Tebogo Mashego, Transnet Engineering, South Africa Climate Change Impact on Water Management in Heavy Haul Railways Israel Machado Rodrigues, Instituto Militar de Engenharia (IME), Brazil Luiz Antônio Silveira Lopes, Instituto Militar de Engenharia (IME), Brazil Analysis of Human Factors Involved in Rail Accidents in China Shang Wu, Tongji University, China Empowering Engineers: The Role of Skills Development and Knowledge Continuity in Advancing Intelligent Heavy Haul Technology Kgashane Moila, Transnet Rail Infrastructure Manager (TRIM), South Africa Paledi Bathabile Langa, Transnet Rail Infrastructure Manager (TRIM), South Africa Leadership Style and Attributes Necessary for Efficient Rail Transportation Services Khuliso Emmanuel Mulaudzi, Transnet Rail Infrastructure Manager (TRIM), South Africa					
IHHA PARALLEL TECHNICAL SESSIONS						
	SUSTAINABLE INNOVATION	BRIDGES & TUNNELS	ROLLING STOCK/WHEELS AND AXLES	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK/RAILS
1:00PM	Opening Comments by Session Chair Selva Karunakaran, UP, USA	Opening Comments by Session Chair Dr Gary Fry, Fry Technical Services, USA	Opening Comments by Session Chair John Deppen, Amsted Rail, USA	Opening Comments by Session Chair Darrien Welsby, Monash University, Australia	Opening Comments by Session Chair Daoxing Chen, Transportation Safety Board, Canada	Opening Comments by Session Chair Greg Garcia, Rocky Mountain Steel Mills, USA
1:05PM	Structural Integrity of Compressed Hydrogen Gas Tanks in Rail Transportation Dr Chris Ladubec, National Research Council, Canada	Evaluation of Fatigue Load Models for Railway Bridges Using Axle Load Measurements in Europe Stefan Verdenius, TNO, The Netherlands	Understanding Hot Spot Formation In Tread Braked Wheels – The Role of Residual Stress Lily Tran, Department of Mechanical and Aerospace Engineering, Monash University, Australia	Automatic Driving Curve Optimization Method of Heavy-Haul Train Based on Deep Reinforcement Learning Xianhong Meng, Guoneng Shuohuang Railway Development Co, China	Railway Operations Puseletso More, Transnet SOC, South Africa	High-hardness Pearlitic Steels: Experimental Study of Wear and Rolling Contact Fatigue Damage and Rail Performance on Actual Tracks Kenta Watari, Nippon Steel, Japan
1:25PM	Interoperable Energy Management Systems and Improvements in Operational Consistency Shad Pate, MxV Rail, USA	Member-Level Redundancy in a Riveted Steel Railroad Bridge Girder Christopher Johnson, MxV Rail, USA	Prevention of Locomotive Wheel-tread Polygonisation through Traction Control Unit Software Modification Ndamulelo Glen Mulaudzi, Transnet Freight Rail, South Africa	Risk Management for Geometric Maintenance Machines Based on ISO 55000 João Nogueira, MRS Logística, Brazil	Evolution of North American Railroads’ Head-of-Train and End-of-Train System Bivesh Paudyal, MxV Rail, USA	Development of Material Parameters for Prediction of Rail Fracture Hesam Mortazavi, Zachary Department of Civil and Environmental Engineering, Texas A&M University Dr Yong-Rak Kim, Zachary Department of Civil and Environmental Engineering, Texas A&M University

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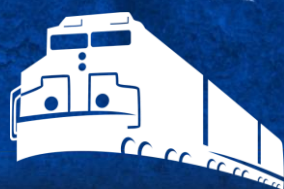
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1:45PM	Economic Viability of Hydrogen Fuel Cells in Brazilian Freight Railways: A Cost-Benefit Analysis Achila Mazini , University of Birmingham, UK	Tunnel Portal Front Slope Displacement Monitoring Based on Beidou Technology Dr Jinfei Chai , Railway Engineering Research Institute, China Academy of Railway Sciences (CARS), China	Study and Analysis of the Mechanism of Strengthening and Toughening in Micro-alloyed Railway Freight Axles for Heavy Haul Applications Yi Wu , China Academy of Railway Sciences Corporation (CARS), China	Fatigue Analysis of Railway Components in the Frequency Domain Bruno Mochiutti , Rumo Logística, Brazil	Strategy For 17,200-Ton Train: Addressing Operational and Maintenance Challenges Camila Moscibrocki , Rumo Logística,, Brazil Paula Giovanni Buba , Rumo Logística,, Brazil	Ofoten Line In-Service Testing of Rail Grades R400HT and 400UHC XR In Small Radius Curves Svetlana Lorentzen , The Norwegian Railway Agency, Bane NOR, Norway Rainer Hochfellner , voestalpine Rail Technology GmbH, Austria
2:05PM	From Detection to Action: Locomotives Requesting Maintenance without Human Intervention Francisco Adilton de Oliveira , MRS Logística, Brazil Pedro Mageste , MRS Logística, Brazil	Comprehensive Maintenance Strategies for Overhead Track Equipment in the Overvaal Tunnel: Addressing Alignment, Tunnel Fittings, and Coal Dust Challenges Mpho Raymond Machethe , Transnet, South Africa	Advancement in Understanding Wheel Failures in North American Freight Railways: Following the Roadmap Dr Mohamad Ghodrati , ENSCO, USA	Measurement and Operational Considerations against Deficiencies in Curve Transitions Mark Montoya , Union Pacific Railroad, USA Yi Wang , Simon Fraser University, Canada	Network Capacity and Operational Efficiency Vivek Mohan , Centre for Railway Information Systems, Indian Railways, India	Metallurgical Effects of Copper Deposition from Loose Bonding Cables on DC Traction Rails: Failure Mechanisms and Rail Integrity Implications Thulani Sitimela , Transnet Rail Infrastructure Manager (TRIM), South Africa
2:25PM	BREAK					
	SUSTAINABLE INNOVATION	HEAVY HAUL UNDER EXTREME CONDITIONS	ROLLING STOCK/BRAKES	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK
2:35PM	Opening Comments by Session Chair Albert Wahba , National Research Council, Canada	Opening Comments by Session Chair Prof Ted Sussmann , Volpe, USA	Opening Comments by Session Chair Dr Qing Wu , CQUniversity, Australia	Opening Comments by Session Chair Charity Duran , BNSF Railway, USA	Opening Comments by Session Chair Sam Alibrahim , Federal Railroad Administration, USA	Opening Comments by Session Chair Mike Gilliam , Union Pacific, USA
2:40PM	In-Field Locomotive Energy Measurement Campaign Supporting Energy Balance Modelling Validation Andrew Wilson , BHP, Australia	Mastering Maintenance in Extreme Conditions with Robotics Loic Ayoul , Future Maintenance Technologies (FMT), Australia Saad Khan , Future Maintenance Technologies (FMT), Australia	Investigation of Freight Railcar Air Brake Performance in Cold Temperatures Alok Jahagirdar , National Research Council (NRC), Canada	Track Geometry Measurement Dependency on Platform Sabri Cakdi , Holland, L.P, USA	Automatic Train Operation of Long and Heavy Haul Trains Considering Longitudinal Impulses Chongyi Chang , China Academy of Railway Sciences Corporation (CARS), China	In-Service Evaluation of Frog Design Features Dr Duane Otter , MxV Rail, USA

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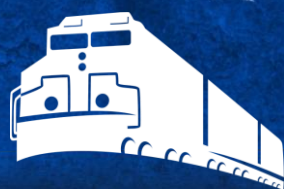
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3:00PM	Heavy Haul Locomotive Path for Decarbonization and Zero Emissions Guilherme Martini , Wabtec Corporation, USA William Carnegie , Wabtec Corporation, USA	Geotechnologies Applied to Railways: Susceptibility to Mass Movements Bárbara Regina Batista Soares , VLI Logística, Brazil Cristiana Carneiro de Souza Cristiana Carneiro de Souza , VLI Logística, Brazil	Research and Application of Vehicle Automatic Parking Brake Technology Ox Yu , Shanghai Allpass Railway Equipment Co, China Shuiming Wang , Railway Equipment Co, China	Rail Side Wear of Switch Tip Area and Its Effect on Derailment Risk Riku Varis , Research Centre Terra, Tampere University, Finland	Improved Digital Communications in Locomotive Consists Through Locomotive Communications Cable David Hunter , MxV Rail, USA	Longitudinal Rail Force Changes from Maintenance Near Turnouts Dr Stephen Wilk , MxV Rail, USA
3:20PM	Leveraging Efficient Rail Operations for Sustainable Economic Growth African Hinterlands Annah Ncube , Transnet Pipelines, South Africa	Rehabilitation of Railway Infrastructure in Response to Natural Disasters: A Case Study on Transnet RNC's Reinstatement of the Container Corridor after the KZN Floods of 2022 Sam Mamabolo , Transnet Rail Network Construction (RNC), South Africa	Effect of Brake Pipe Leakage on Brake Performance #150 Dr Yi Wang , MxV Rail, USA	Axle Box Acceleration Measurements for Detecting Irregularities in the Railway Track Ursula Ehrhart , Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria	Autonomous Supervised Operation: Railway Automation in Brazil Gabriel Barros , MRS Logística, Brazil Sérgio Cassemiro , MRS Logística, Brazil	Evaluation of Acceptance Limits for Undesirable Microstructural Constituents in Flashbutt Welds for Heavy Haul Applications at BHP Lenka Kuzmnikova , BHP Australia
3:40PM	A Study into Multi-Dimensional Monitoring Solution for Heavy Haul Locomotives and Further Discussion on Heavy Haul Wheel Polygonization Development Qi Xiao , China Academy of Railway Science Corporation Limited Locomotive & Car Research Institute, China		Dynamic-static voltage-feedback detection for traction converter of heavy-duty electric locomotive Hang Lu , Locomotive & Car Research Institute, China Academy of Railway Sciences (CARS), China	Dynamic Response to Track Geometry: Ride Quality vs. Safety Abel Ayele , University of Delaware, USA	Railroad Monitoring Using Fiber Optic and Artificial Intelligence Renato Duque Ribeiro , VLI Logistica, Brazil Yugo Nomura , Sensonic, Brazil	Simulating the Effect of Rail Surface Roughness on Rolling Contact Fatigue (RCF) Prof Andreas Almqvist , Luleå University of Technology, Sweden Per-Olof Larsson-Kräik , Trafikverket and Luleå University of Technology, Sweden
4:00PM	BREAK					
4:10PM	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL					
4:10pm-4:50pm	Enhancing Heavy-Haul Yard Operational Efficiency Through Lean Principles Nkosinathi Malinga , Transnet Freight Rail, South Africa Agile Introduction of an End-to-End Cargo Operation Software at SBB Cargo Nicki Skujat , DXC Technology, Germany Dr Thomas Albrecht , DXC Technology, Germany High-Speed Rail Inspection by Non-Contact Sensing and Advanced Processing Dr Francesco Lanza di Scalea , University of California, USA Rail Flaw 3D Imaging by Enhanced Ultrasonic Synthetic Aperture Focus Technique Dr Chengyang Huang , University of California, USA Dr Francesco Lanza di Scalea , University of California, USA					

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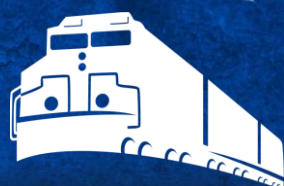
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	European Rail Traffic Management System for Resilient Railway Infrastructure Iolanda De Castro, Italferr, Italy Serena Rosace, Italferr, Italy Delay and Required Infrastructure Investment to Landing and Switching Freight Trains Within Port Terminals Darkhan Mussanov, DB ECO North America, USA Fatigue Life Analysis of Railway Couplers Using Rainflow Method Camila Moscibrocki, Rumo Logistica, Brazil Opportunities, Challenges and Structuring Proposals for Fuel Transport to Brazil's Central West Prof Antonio Silveira Lopes, Military Institute of Engineering (IME), Brazil Robson Ferreira de Souza, Petrobras Transportes – Transpetro, Brazil Exploring Rail Incident Factors using Machine Learning Gabby Gutierrez, University of Texas Rio Grande Valley, USA Real-Time FRACAS for Enhanced Railway Operations and Predictive Maintenance Adi Dhora, Hottinger Bruel & Kjaer, USA
4:55pm- 5:35pm	Innovative Testing of Residual Stress of Railway Wheels Pieter Conradie, Stellenbosch University, South Africa Wagon Bogie Frame Life Evaluation Using FE and MBD Coupling Abhishek Kumar Gautam, Ministry of Railways, Government of India Sanjay Kumar, Ministry of Railways, Government of India, India Lightweight Tubular Axle Benefit to Wheel-Rail Contact and Impact Loads Ronaldo de Faria Antunes, Vallourec, Brazil Effect of Long-Term Inactivity on Railcar Bearings: Preliminary Results Mia Adame, University Transportation Center for Railway Safety (UTCRS), USA Broken Wheels by Cracking of Wheel Webs – A Numerical Study on Combined Thermal and Mechanical Loading Tore Vernersson, Railway Mechanics, Chalmers University of Technology, Sweden Innovation in Railway Safety: Application for Defect Categorization Pamella Franciely Silva, Rumo Logistica, Brazil Leonardo Borim de Almeida, Rumo Logistica, Brazil Optimisation of AAR M201 Grade E Properties for Cast Railway Components Thompson Chauke, Transnet Engineering, South Africa Design and Analysis of Spheribloc (Silent bloc) used in WAG9 and WAP7 Locomotives in Polymeric Elastomers Replacing Rubber Vinayak Mehrotra, Mechanical & Industrial Engineering Department, Indian Institute of Technology Roorkee, India

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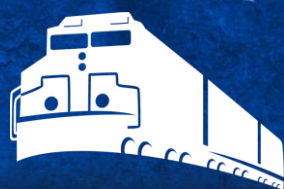
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	SUSTAINABLE INNOVATION	HEAVY HAUL UNDER EXTREME CONDITIONS	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK
4:10PM	Opening Comments by Session Chair David Brabb , Federal Railroad Administration, USA	Opening Comments by Session Chair Prof Andrew Quinn , University of Birmingham, UK	Opening Comments by Session Chair Maksym Spiryagin , CQUniversity, Australia	Opening Comments by Session Chair Dr Emma Molobi , Transnet, South Africa	Opening Comments by Session Chair Radim Bruzek , ENSCO, USA
4:15PM	Reducing Risk and Emissions: Challenging M/W to Develop More Sustainable Maintenance Practices Sarah Mueller , Union Pacific Railroad, USA	Study of Increased Fractures Associated with Temperature, Transported Volume and Rail Replacement Plan Ana Carolina Lopes de Azevedo , MRS Logística, Brazil Rafael Pereira , MRS Logística, Brazil	Investigation and Prevention of Broken Wheel Derailments in Heavy Haul Operations Michelle Jamieson , Transportation Safety Board of Canada (TSB), Canada Robert Leblanc , Transportation Safety Board of Canada (TSB), Canada	Energy Efficiency in Long Haul Trains Daniel Ferreira da Fonseca , MRS Logística, Brazil Guilherme Augusto Schmidt da Silva , MRS Logística, Brazil	Methodology for Selecting Optimal Rail Grades Based on Performance and Life Cycle Costs Adriano Magalhães Freitas , Rumo, Brazil
4:35PM	Non-Contact Energy Harvester for Rural Grade Crossings Prince Mensah , University Transportation Center for Railway Safety (UTCRS), USA	Influence of Temperature on the Conservation State of Rails Gabriel Castro Viegas , Vale, Brazil	Developing an Accessible Load Measuring Wheelset for South African Railways Rolien Rossouw , Transnet, South Africa	The Impacts of Highway Improvements on Railways in Steep Valleys Dr Chris Bunce , BGC Engineering, Canada	Effects Of Operational and Track Conditions on Low Rail Performance Dr Ananyo Banerjee , MxV Rail, USA
4:55PM	Incremental Diesel-Electric Freight Locomotive Conversions as a Pathway to Decarbonization Rydell Walthall , University of Texas at Austin, USA	The Impact of Climate Change on the South African Rail Network Mohammad Ridhaa Dien , Transnet Freight Rail, South Africa	Optimizing Heavy Haul Wheel Maintenance: Solid Tread Friction Modifiers from Lab Tests to Simulations and Field Implementation Saeed Hossein-Nia , NRC, Canada	Analysis of the Effect of Distributed Power on Long-Train Derailments Xinhao Liu , University of Illinois Urbana-Champaign, USA	Wear Resistance of Rail Coatings Using L-DED Paulo Machado , Federal University of Pará, Brazil
5:15PM	Battery Electrification of the Flash-Butt Rail Welding Process Shane Mayhill , Holland, L.P, USA	Sustainable Innovation: A Rail Fastening System Developed to Increase Productivity, Reduce Costs and Improve Track Safety Frédéric Delcroix , Pandrol, France	Rolling in the Desert: Heavy Haul wheels for Saudi Arabia Alberto Ronchi , Lucchini RS, Italy	Study on the Transportation Organization Plan of 30 000-ton Heavy-Haul Trains Running on Shuozhou-Huanghua Railway L Lan , Guoneng Shuohuang Railway Development Co, China Xianhong Meng , Guoneng Shuohuang Railway Development Co, China	Rail Surface Defect Detection Using Advanced Deep Learning Techniques Ankit Kumar , Centre for Railway Research, India, India
5:35PM	CLOSE OF CONFERENCE SESSIONS				
5:35PM-7:00PM	EXHIBITION NETWORKING RECEPTION <i>Available to sponsor</i>				

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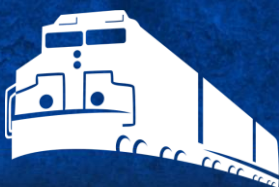
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WEDNESDAY NOVEMBER 19, 2025

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, Exec. VP of Sales & Marketing, and Chief Commercial Officer – Americas, Wabtec Corporation, 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

David de Almeida, Director for Research, SNCF, France

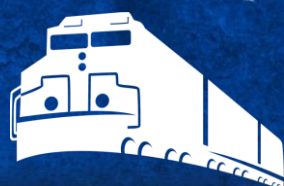
Moderator: **Scott Cummings**, AVP, Research and Innovation, MxV Rail, USA

9:30am COFFEE BREAK & EXHIBITION NETWORKING

IHHA PARALLEL TECHNICAL SESSIONS

	TRACK/ MONITORING	HEAVY HAUL UNDER EXTREME CONDITIONS	ROLLING STOCK/ BEARINGS	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK/ COMPONENTS
9:40am	Opening Comments by Session Chair Dimitris Rizos , University of South Carolina, USA	Opening Comments by Session Chair John Cookson , Monash University, Australia	Opening Comments by Session Chair Devin Sammon , MxV Rail, USA	Opening Comments by Session Chair Zili Li , Delft University of Technology, The Netherlands	Opening Comments by Session Chair Francesco Jacobini , Federal Railroad Administration, USA	Opening Comments by Session Chair Steve Ashmore , Union Pacific Railroads, USA
9:45am	Case Study of Track Structure Monitoring Using Inclinometers and Piezometers Guilherme Santa Esteves , TecWise Latam, Brazil	Impact of Sub- Freezing Conditions on Ballast Strength: A Laboratory Study Coleman Froehlke , University of Illinois – Urbana Champaign, USA	Effects of Sidebearer & Bearing Characteristics on Angle of Attack Shabbir Hussain , Wayside Inspection Devices Inc, Canada	Enhancing Operations Resilience and Sustainability through Technological Advancements in Rail Grinding Richard Stock , Plasser American Corp, USA	Enhancing Human Factors Through Automated Risk Profiling in Heavy Haul Operations Nelisiwe Tembe , Transnet Rail Infrastructure Manager (TRIM), South Africa	Spike Fatigue Life Based on In-Track Load Measurements Yin Gao , MxV Rail, USA

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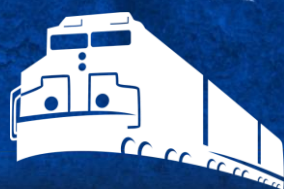
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10:05am	Innovative Track Monitoring Using FBG Sensors: Sensor Placement Optimization Deb Mishra , Oklahoma State University, USA	Railway Vulnerability Assessment To Rain Induced Hydrogeological Instability Under Climate Change Elena Conigliaro , Italferr, Italy Stefania Vagnozzi , Italferr, Italy	Journal Bearing Optimization for Heavy Haul Applications Daniel Blasko , The Timken Company, USA Malayil Suresh Kumar , Timken Engineering & Research India, India	Using Simulation and In-Field Monitoring to Improve Rail Performance Darrien Welsby , Institute of Railway Technology, Monash University, Australia	Human Factors Management Program for Railway Operators: Applying Aviation Techniques to Improve Performance and Safety in Rail Operation Joubert Costa , MRS Logística, Brazil	Improved Fishplate and Clamping System Requirements for Heavy Haul Railways Dr Cong Qiu , Institute of Railway Technology, Monash University, Australia
10:25am	Enhancing the Range of Electrical Pulse Response Track Monitoring and Condition Diagnostics Tian Kunneke , HisWay Labs, South Africa	Optimization of the Maintenance Plan for Geotechnical Assets through a Susceptibility Map Camilly Tostes Pinto da Silva , MRS Logística, Brazil Nielsen Armando Barguini , MRS Logística, Brazil	Multisource Fatigue Fracture Analysis and Maintenance Intervals Realignment of Bearings in the Gearbox of Heavy-haul Locomotive Zhewei Zhang , China Academy of Railway Sciences Corporation (CARS), China	Track Defect Detection Using Data Collected from Instrumented Railway Vehicles Arthur Cancellieri , University of Campinas (Unicamp), Brazil Leonardo Tadeu Lima Franco , University of Campinas (Unicamp), Brazil	Interoperability and Harmonisation of a National Rail Signalling System across Australia Teck Lee , Bluefin3, Australia	An Innovative Insulated Rail Joint for Heavy Haul Applications Dr Andrea Bracciali , University of Florence Italy Dr Gianluca Megna , University of Pisa, Italy
10:45am	BREAK					
10:55am	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL					
	Reliability analysis and maintenance strategy for D31 traction motor Gustavo Grzybowski da Silva , Rumo Logística, Brazil Glaysen Carlos Ramos , Rumo Logística, Brazil Automated System for Professional Development in Railway Traction Power Supply: From Simulation to Real-World Application Nikita Gorshkov , JSC VNIHIZT (Railway Research Institute), Russia Alternative Fuels Ashish Kumar Gupta , Research Design Standard Organisation (RDSO), Ministry of Railways, Government of India Kamlesh Tomar , Research Design Standard Organisation (RDSO), Ministry of Railways, Government of India Building Digital Worlds: Computational Design Tools for Emulating Battery-Electric Locomotives Dr André Broekman , Aurecon, South Africa Energy Balance Modelling for Guiding the Transition to Battery-Electric Locomotives Dr Rick Vandoorne , Aurecon, South Africa Enhancing Safety and Efficiency in Heavy Haul Rail Operations Through On-Track Measurement of Wheel Defects Dietmar Maicz , Hottinger Brüel & Kjaer, Austria Updates on Locomotive Decarbonization Initiatives Luis Deltregia , MRS Logística, Brazil					
	TRACK/CWR	HEAVY HAUL UNDER EXTREME CONDITIONS	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK/WELDING	
10:55am	Opening Comments by Session Chair Robert Wilson , Federal Railroad Administration, USA	Opening Comments by Session Chair Jim Hyslip , HNTB, USA	Opening Comments by Session Chair Joshua McBain , BNSF Railway, USA	Opening Comments by Session Chair Adam Klopp , MxV Rail, USA	Opening Comments by Session Chair Kerry Jones , MxV Rail, USA	

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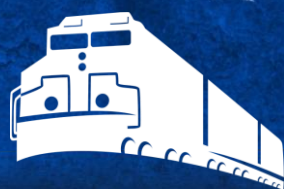
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2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

11:00am	Optimizing Longitudinal Stress Management Through 4.0 Technologies to Improve Safety Darshani Nalesa Govender , Transnet, South Africa Kgosietsile Mokwena , Transnet, South Africa	A Retrospective on Ten Years of Geohazard Risk Management along the Quebec North Shore and Labrador Railway: Geohazards in a Changing Climate Natalia Skomorowski , BGC Engineering, Canada	Automated Track Inspection System Delivers Preventative Maintenance Gains Peter Hermann , Aurizon, Australia	Power Generation for Heavy Haul Wagons Marc Listmangof , Institute of Railway Technology, Monash University, Australia	Semi-automated aluminothermic Rail Welding as a Model for the Future in Track Construction and Maintenance Frédéric Delcroix , Pandrol, France Nicolas Demond , Pandrol, France
11:20am	Preventive Maintenance Prioritization for Track Assets at Risk of Buckling Guilherme Candido Cavalheri , Rumo Logística, Brazil Larissa Padilha Lacerda , Rumo Logística, Brazil	Investigating the Effectiveness of Lightning Protection of Railway Signaling Systems During Summer Vhutshilo Kharivhe , Transnet, South Africa	Evolution of Automated Track Condition Monitoring: A Decade of Innovation and Safety Improvements John Furlong , CPKC, USA Rafael Maldonado , ENSCO, USA	Plasma-Transfer Welding as a Tool for Life Extension of Railroad Wheels Cameron Lonsdale , Vice President, Government Affairs, Amsted Rail, USA	Case Study - First Evaluating Flash-Butt Welding for Different Rail Profiles Rodolfo Vilela Amaral , Loram South America, Brazil
11:40am	Track Superstructure Design Considerations to Increase Buckling Resistance Brandon Van Dyk , Vossloh Fastening Systems America Corporation, USA	Railway Embankment Management Plan Camilly Tostes Pinto da Silva , MRS Logística, Brazil Nielsen Armando Barguini , MRS Logística, Brazil	AI-Based Real Time Video Analytics System for Detecting Railway Defects Dr Nithurshan Nadarajah , Institute of Railway Technology, Monash University, Australia	Improving Durability of Railway Wheel Using Laser Cladding Makoto Akama , Faculty of Systems Engineering and Department of Systems Engineering, Osaka Sangyo University, Japan	TIG Arc Refusion Treatment of the Rail Welding Paulo Machado , Federal University of Pará, Brazil
12:00pm	LUNCH, EXHIBITION NETWORKING & IHHA ePOSTERS				
12:20pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL				
	Computer Vision Applied to Turnout Inspection with Drone Marcelo Augusto , MRS Logística, Brazil Improving aluminothermic weld behavior through micro-structure and mold geometry modification Clément Meresse , Pandrol, France Lionel Winiar , Pandrol, France Field-Based Assessment of Rail Fixations Behaviour Under Torsional Loads Francesco Marangon , TU Graz, Austria Uninterrupted Track Geometry Parameter Measurement with Zero Speed Track Geometry Measurement System Bernhard Karl Metzger , ENSCO, USA Experimental Assessment of Fracture in Rails Due to Cyclic Loading Özant Özümert Bulguoğlu , Texas A&M University, USA The condition monitoring practice on the Iron Ore Line, Malmbanan Dr Matthias Asplund , Trafikverket, Swedish Transport Administration, Sweden Development Of Damage Function for Heavy Haul Rails Xin Zhao , State Key Laboratory of Rail Transit Vehicle System, Southwest Jiaotong University, China Study of Railway Subgrade Solutions for Weak Subsoil Thayse Balarotti Pedrazzi , University of Campinas, Brazil Leveraging AI and Image Processing for Predictive Track Maintenance Kagiso Letlala , AECOM, South Africa Extending the Life and Performance Life Extension of Turnouts, Bridge Decks and Plain Line Timber Ties Stephen Atherton , Rhomberg Sersa North America, USA				

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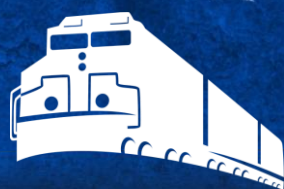
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	SUSTAINABLE INNOVATION	MOTIVE POWER, TRACTION & EFFICIENCY	ROLLING STOCK	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK/ INSPECTION
1:00pm	Opening Comments by Session Chair Alejansro Alvarez-Reyes, ENSCO, USA	Opening Comments by Session Chair James Petty, Aurizon Australia	Opening Comments by Session Chair Jay Monaco, Amsted Rail, USA	Opening Comments by Session Chair Richard Stock, Plasser, USA	Opening Comments by Session Chair Prof Ravi Ravitharan, Monash University, Australia	Opening Comments by Session Chair Silvia Galvan-Nunes, MxV Rail, USA
1:05pm	Validating Heavy Haul Fuel Savings with Advanced Statistical Analysis Marco Santoro, LB Foster Rail Technologies, USA Robert Stevens, First Analytics, USA	Investigation of Intelligent Algorithms and Control Strategies for Battery Management System in Heavy Haul Locomotives: Digital Twin Design Approach Maksym Spiryagin, CQUniversity, Australia	Conditional Maintenance Strategy for Wagon Wheelsets through Hollow Depth Control Leandro Rocha Lopes, Vale, Brazil	A Comprehensive Operation Safety Performance Evaluation Framework for Heavy-Haul Trains Zhichao Zhang, China Academy of Railway Sciences (CARS), China	Strengthening Safety in Constant Warning Time Grade Crossing Signaling Applications Guilherme Brito Rodrigues, MRS Logística, Brazil Conrado Nunes, MRS Logística, Brazil	Machine Vision Systems for Track Inspection: A Management Perspective Arthur Bilheri, BNSF Railway, USA
1:25pm	Railway Axle Metallization: Innovation in Axle Recovery and Regulatory Framework Development Raidam Fernandes, Vale, Brazil	Exploration and Implementation of Railway Catenary System Advanced Intelligent Monitoring Technology Yin Yanhong, China Academy of Railway Science Corporation Limited Locomotive & Car Research Institute, China	Development and Creation of Tank Car Test Plates for Non-destructive Evaluation Assessments Stephen Mackie, National Research Council (NRC), Canada	North American Rail Profile Grinding Templates' RCF and Wear Performance Ulrich Spangenberg, MxV Rail, USA	Untapped Potential of Mass-collected Rail Profiles Gustavo Dias Silva, Global Rail North America, Canada	Update on Canadian Research to Develop a 3D Laser and AI Based Approach for Automated Switch and Frog Inspection Richard Fox-Ivey, Railmetrics, Canada
1:45pm	Enhancing Fault Response Time and Substation Performances in Heavy Haul Railway Buyisile Zwe Phoswa, Transnet Freight Rail, South Africa	Enhancing Sustainable Energy Efficiency Through Solar Photovoltaic Intergration in Locomotives Adrian Chinnarajulu, Transnet Rail Infrastructure Manager (TRIM), South Africa	Draft Gears: Design, Selection and Maintenance to Maximize Rolling Stock Reliability Ross Hartley, Miner Enterprises, USA	Performance Evaluation of AAR-2A Wheel Profile for Freight Cars Nilton de Freitas, Rumo Logistica, Brazil Samuel Carlos Winiarski, Rumo Logistica, Brazil	Concrete Sleeper Life Cycle Management Strategy Surendra Bisht, Aurecon, Australia	Correlation Between Degradation of Geometric and Anomalies in Railway Turnouts Jean Carlos Santos, Rumo Logistica, Brazil
2:05pm		A Greater Role for Batteries Scott Swenson, Progress Rail, A Caterpillar Company, USA	Developing Additional Safety Functionality for Air Brake Telemeters Nikheil Bryan Singh, Transnet Freight Rail, South Africa	Train Vehicle Number Recognition and Consist Counting Using Deep Learning Sihle Ntuli, Transnet Freight Rail, South Africa		Case Study: Statistics Correlation Between GBFI And Geometry Readings Amanda Conradt, Loram South America, Brazil Leonardo Soares, Loram South America, Brazil

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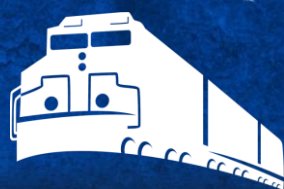
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2:25pm	BREAK					
	SUSTAINABLE INNOVATION	MOTIVE POWER, TRACTION & EFFICIENCY	ROLLING STOCK	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK
2:35pm	Opening Comments by Session Chair Heikki Luomala , Tampere University, Finland	Opening Comments by Session Chair Makoto Akama , Osaka Sangyo University, Japan	Opening Comments by Session Chair Alberto Ronchi , Luccini, Italy	Opening Comments by Session Chair Alfredo Nunex , Vicencio, TU Delft, The Netherlands	Opening Comments by Session Chair Andrea Berry , CN, Canada	Opening Comments by Session Chair Prof Hannes Gräbe , University of Pretoria, South Africa
2:40pm	Addressing Challenges and Opportunities in Rail Maintenance for Enhanced Sustainability in the Pit-to-Port System: A Systems Dynamics Approach Shunturi Govender , BHP, Australia	Aurizon's Keystone - The Future of Asset Management James Petty , Aurizon, Australia Jared Chiesa , Aurizon, Australia	High Performance Wheel Testing Kerry Jones , MxV Rail, USA	Heavy-Haul Railway's Track Geometric Irregularity Experiment and Classification Management Criteria Dr Jianjun Qu , China Academy of Railway Sciences (CARS), China	Forward-Facing Camera System Using Artificial Intelligence-Based Image Processing for Train Protection Derel Wust , 4AI Systems, USA Mark Wood , 4AI Systems, Australia	Optimization of Track Stiffness Transitions Using Specialty Concrete Sleepers and Fastener systems Matheus Trizotto , voestalpine Railway Systems Nortrak, USA Ricardo Quiros-Orozco , voestalpine Railway Systems Nortrak, USA
3:00pm	Proactive Condition Assessment and Maintenance Strategies for Coal-line Track Formation Portia Thuso Mhlanga , Transnet Rail Infrastructure Manager (TRIM), South Africa	A Practical Approach to Determining the Economic Benefits of Converting from 3kV DC to 25kV AC Electrification Systems in South Africa Theolen Chetty , Transnet Freight Rail, South Africa Kaid Rendall , Transnet Freight Rail, South Africa	Validation Of Wheel Flat Detection and Characterisation Using Wayside Data Wolfgang Birk , Predge AB, Luleå University of Technology, Sweden	Canadian National Autonomous Track Inspection Program (CN ATIP) Tarek Shalaby , ENSCO, USA Daniel Leeb , Canadian National Railroad, Canada	Deep Reinforcement Learning Applied to Flat Yard Shunting Optimization Rael Andretto , MRS Logística, Brazil	Field Experimentation Quantifying Rail Creep in a Steep-Grade Curve Jose Gustavo Venancio da Silva Ramos , Rail Transportation and Engineering Center - RailTEC, USA
3:20pm	The Impact of Rail Grinding on Fuel Efficiency at Rumo Christopher Lidberg , Loram Maintenance of Way, USA	Investigating Substation Power Trips in the Heavy Haul Railway Line Akhona Jaca , Transnet Freight Rail, South Africa	Increase in Wheel Consumption Rate after Rail Grinding Amanda Conradt , Loram South America Brazil Leonardo Soares , Loram South America Brazil	Case Studies Using Vehicle-Track Interaction Digital Twins for Maintenance Decisions Dr Ankur Ashtekar , Loram Technologies, USA	Simulation of Wheel-Rail Friction Identification Using Instrumented Revenue Vehicles (IRVs) Kevin David Oldknow , Simon Fraser University, Canada	Implementation of Infrequent Overload 44.05 TAL Limit on Existing Track Infrastructure Ksenija Stanic-Colic , Roy Hill Holdings, Australia

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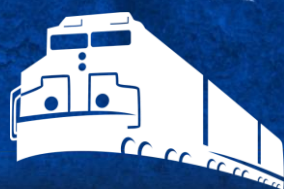
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3:40pm	Optimization of Rail Lubricators on the Vitória a Minas Railway to Increase Performance and Reduce Grease Consumption Eric Pretti, Vale, Brazil	Alternative Propulsion Systems for a Specific Locomotive Iaan Rossouw, Transnet Engineering, Research and Development, South Africa Sanet Smit, Transnet Engineering, Research and Development, South Africa	The Effect of Freight Wagon Bogie Type on Track Loads Tiia Lopenen, Research Centre Terra, Tampere University, Finland	Development of an Algorithm for Mitigating Hunting Instability and Predicting Railhead Wear in South African Heavy Haul Wagons Tumisang Legodi, Transnet Rail Infrastructure Manager (TRIM), South Africa	Measuring Freight Throughput for Locomotive Forecasting Needs Sakshna Sivnarain, Transnet Freight Rail, South Africa	SILETIE: Heavy Haul Crossties Mechanical Monitoring, A Study of Case Geiza Oliveira, Sileto Technology, USA
4:00pm	BREAK					
	SUSTAINABLE INNOVATION	TRACK/WELDING	ROLLING STOCK	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK/SLEEPERS & FASTENERS
4:10pm	Opening Comments by Session Chair Chris Lidberg, Loram, USA	Opening Comments by Session Chair Joe Kristan, Rocky Mountain Steel Mills, USA	Opening Comments by Session Chair Yi Wang, MxV Rail, USA	Opening Comments by Session Chair Anders Ekberg, Chalmers University of Technology, Sweden	Opening Comments by Session Chair Joe Brosseau, MxV Rail, USA	Opening Comments by Session Chair Yin Gao, MxV Rail, USA
4:15pm	Action Priority Matrix and Technology Roadmap for Machine-Learning Predictive Maintenance Lindelani Nethamba, Transnet Freight Rail, South Africa	Novel Approach to Qualification of Mobile Flashbutt Welder Fleet at BHP Jack Rankcom, RW Equipment and Consulting, Australia	Welding Flux Optimization Ensuring Integrity and Success of Heavy Haul Wagons Naeema Kharsany, Transnet Engineering, South Africa	Battling low rail damage in wide-gauge curves on heavy haul lines Marie-Chantale Genest, ArcelorMittal Infrastructure Canada, Canada Rob Caldwell, National Research Council (NRC), Canada	Enhancing Railway Operations Safety Through Innovative Hazard Detection with Distributed Acoustic Sensing Dr Milad Salemi, Sensonic, USA	Union Pacific's EPC Tie Journey Michael Gilliam, Union Pacific Railroad, USA
4:35pm	Climate Resilience and Geohazard Assessment of Heavy Haul Corridors Using Space Technology Skevi Perdikou, Geofem, Cyprus	Mobile Heat Treatment of Aluminothermic Welds: Improving Mechanical Properties, Service life, and Reliability Dr Luiz Henrique Dias Alves, Federal University of Juiz de Fora, Brazil	Defect Prediction of Bearings Using Ultrasonic and Eddy Current Inspections Sergio Martinez, University of Nebraska-Lincoln College of Engineering, USA	A Robust Scientific Approach to Optimizing Heavy Haul Turnouts Darrien Welsby, Institute of Railway Technology, Monash University, Australia	Dynamic Simulation of Risky Train Movement Exceeding Limits of Authority Dr Daoxing Chen, Transportation Safety Board of Canada, Canada	Comparative Evaluation of Under Tie Pads on Railroad Track Maintenance Arthur de O.Lima, RailTEC, University of Illinois at Urbana-Champaign, USA
4:55pm	Characterisation of As Cast and Heat-Treated Grade B Castings Microstructures Using Ultrasonic Testing Austin Ndhambi, Transnet Engineering, South Africa	Causes and Resolution of Low Strength in Flashbutt Welds in Premium Rails John Cookson, Institute of Railway Technology, Monash University, Australia	Management of Coupling Forces Via Mathematical Modeling and Machine Learning Camila Moscibrocki, Rumo Logistica, Brazil	Development of Magnetostrictive EMAT Technology for In-Motion Wheel Inspection Dr Anish Poudel, MxV Rail, USA	Digital Automatic Coupler for Freight - Full Digital Freight Train Operations - EU Rail project Frédéric Henon, UIC, France	Same Static Stiffness Leads to Same Performance? - Not When It Comes to Under Sleeper Pads Michael Sehner, Getzner Werkstoffe, Austria Raphael Marotta, Getzner Werkstoffe, Austria

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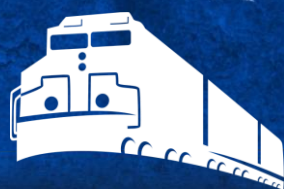
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5:15pm	Evaluation of Operational Safety Increase due to Implementation of Automated Rain Gauges along the Carajás Railway in Brazil Juliana Tanabe Assad dos Santos , Vale, Brazil Thiago Cezar Oliveira , Vale, Brazil	Weld Battering: A Comparative Study of Thermite and Flash-butt Welding Dr Markus Loidolt , Graz University of Technology, Institute of Railway Engineering and Transport Economy, Austria	Effect of Outer Raceway Indexing on the Measured Vibration Response of Defective Railway Tapered-Roller Bearings Dr Constantine Tarawneh , University of Texas Rio Grande Valley, USA	Digital Transformation in Rail: Business Intelligence Application for Advanced Analytics Nikheil Singh , Transnet Freight Rail, South Africa Nthabiseng Maake , Transnet Freight Rail, South Africa	Cost-Benefit Analysis of Traditional and Semi-Mechanized Ballast Track Construction Using Discrete Event Simulation Hossein Taheri , Georgia Southern University, USA	Machine Learning for Predictive Modeling of Crosstie Degradation: Key Factors in Forecasting Remaining Service Life Dr Kenza Soufiane , Loram, USA
5:35pm	CLOSE OF CONFERENCE SESSIONS					
6:30pm-9:30pm	GALA DINNER Sponsored by Plasser & Theurer 					

THURSDAY NOVEMBER 20, 2025					
7:30am	MORNING COFFEE, NETWORKING & REGISTRATION				
IHHA PARALLEL TECHNICAL SESSIONS					
	TRACK/CWR	BRIDGES	ROLLING STOCK	TRACK/BALLAST& SUBGRADE	TRACK/TURNOUTS
8:30am	Opening Comments by Session Chair Feancisco di Scalea, UCSD, USA	Opening Comments by Session Chair Duane Otter, MxV Rail, USA	Opening Comments by Session Chair Ulrich Spangenberg, MxV Rail, USA	Opening Comments by Session Chair Dustin Lange, Norfolk Southern, USA	Opening Comments by Session Chair Elias Kassa, Monash University, Australia
8:35am	A New Paradigm for Non-Contact Measurement of the in-Track State of Stress in Continuously Welded Steel Railway Rail Dr B. Terry Beck, Kansas State University, USA Veeshal Modi, Kansas State University, USA	Integrated Vibration-Based Bridge Monitoring Approach For Freight Dominated Lines Alfredo Núñez, Delft University of Technology, The Netherlands Prof Zili Li, Delft University of Technology, The Netherlands	Hopper Wagon Optimization for Soybean and Corn Transportation in Brazil Danilo Martelli, Rumo Logistica, Brazil	Concrete Tie Behavior In Different Ballast Support Conditions Adam Bankston, BNSF Railway, USA Dr Stephen Wilk, MxV Rail, USA	Next Generation of Heavy Haul Turnouts Stacey L. Schmidt, voestalpine Railway Systems Nortrak, Canada Uwe Ossberger, voestalpine Railway Systems, Austria
8:55am	Development of Method for Track Buckle Hotspot Identification Using Geometry and Laser Based Data Arthur de Oliveira Lima, University of Illinois – Urbana Champaign, USA J. Riley Edwards, University of Illinois – Urbana Champaign, USA	Railway Bridge Failures World Directory, New Indices for Safety Management Éric Auzolles, Ministry of Transport and Sustainable Mobility, Canada	Numerical Assessments of Air-Drags for Current and Modified Designs of Australian Freight Wagons Dr Qing Wu, Centre for Railway Engineering, CQUniversity, Australia	Development of a Formulation to Calculate Railway Subgrades Allowable Stress Dalila Carvalho de Almeida Filippetto Pires, Vale, Brazil Raiane da Costa Virgílio, Vale, Brazil	Railroad Turnout Elasticity Optimization Using Revenue Service Wheel Profiles, Jaeik Lee, RailTEC, University of Illinois at Urbana-Champaign, USA
9:15am	Factors Affecting Lateral Resistance and Track Buckling	Short-Span Steel Railway Bridge Concepts for Heavy-Haul Systems	A New Approach to Transnet's HS MK V Bogies: Transitioning	Non-Destructive Methods to Assess Subgrade and	Comparative Analysis of Operational Performances

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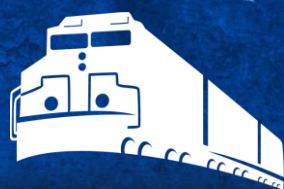
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	Dr Heikki Luomala , Research Centre Terra, Tampere University, Finland	Dr Gary Fry , Fry Technical Services, Inc., USA	from Casting to Fabrication Cherise Rachel Govender , Transnet Freight Rail, South Africa Sheraton Singh , Transnet Freight Rail, South Africa	Track Construction Quality Asger Eriksen , Zetica Limited, UK	Between Fixed and Movable Frog Turnouts Fábio Fredi Ribeiro de Melo , Companhia do Metropolitano de São Paulo Brazil Helder José Ribeiro Soares , Companhia do Metropolitano de São Paulo Brazil
9:35am	A Mobile System for Reference-Free Non-Destructive Neutral Temperature and Rail Stress Measurements Dr Dimitrios Rizos , University Transportation Center for Railway Safety, USA Brennan Gedney , University of South Carolina, USA	Multi-temporal InSAR for long-term monitoring of railway bridge structural behavior Changgil Lee , Korea Railroad Research Institute, Republic of Korea	RCM as a Methodology for Defining Locomotive Maintenance Strategy Gustavo Grzybowski da Silva , Rumo Logistica, Brazil Lucas Alves Dias Oliveira , Rumo Logistica, Brazil	Continuous measurement of ballast cleaning quality Franco Fanucci , Loram Maintenance of Way, USA	Gauge-Based Sleeper Condition Analysis in Turnouts Andrea Katharina Korenjak , Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria Markus Loidolt , Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria
9:55am	BREAK				
	TRACK/CWR	SUSTAINABLE INNOVATIONS	TRACK/SUBGRADE	RAIL, WHEEL & AXLE INSPECTIONS	TRACK MAINTENANCE
10:05am	Opening Comments by Session Chair Jonathan Leung , KTH Royal Institute of Technology, Sweden	Opening Comments by Session Chair Antonio Merheb , MRS Logistica, Brazil	Opening Comments by Session Chair Deb Mishra , Virginia Tech, USA	Opening Comments by Session Chair Dr Ananyo Banerjee , MxV Rail, USA	Opening Comments by Session Chair Franco Fanucci , Loram, USA
10:10am	Prevention of Buckling through Autonomous Track Geometry Measurement System Inspections Rafael Pereira Kox , MRS Logística, Brazil	Renewable Energy Integration for Heavy Haul Traction Loads Patrick Croucamp , Transnet Rail Infrastructure Manager (TRIM), South Africa	Union Pacific Railroad's Integrated Strategies for Roadbed Maintenance and Geohazard Management Rachel Beck , Union Pacific Railroad, USA	Manufacture of Rail-Nondestructive Testing for Acceptance and Characterization Greg Garcia , Rocky Mountain Steel Mills, USA	Research on Intelligent Perception Framework and Maintenance Decision-making of Heavy Haul Railway Track Infrastructure Ma Zhangguo , China Academy of Railway Sciences Corporation (CARS), China
10:30am	Latest advancements in FRA CWR and Track Buckling Research Radim Bruzek , ENSCO, USA	An Intelligent Condition Monitoring System for Viable Railway Neutral Sections Kennedy Phala , Transnet Freight Rail, South Africa	Track Settlement Mitigation of Degraded Ballast through a Rubber-Bitumen Coating Prof Hannes Gräbe , University of Pretoria, South Africa	Latest Developments in Surface Inspection Technology for Railway Axles in Production Angelique Raude , Evident Scientific, USA Daly Souissi , Evident Scientific, USA	Automation in Track Maintenance: A Solution to Workforce Shortages Dr Fabian Hansmann , Plasser & Theurer, Austria Hakan Uzuner , Plasser American, USA
10:50am	Rail Break and Track Buckling Risk Assessment after Derailment Reconstruction	Railway Efficiency and Sustainability through Condition-Based Maintenance Glauber Sterdi Luiz , VLI Logística, Brazil	Soil-Binder Mixtures Dr Abdoul Aziz Diene , Vale, USA	A Comprehensive Solution for Railway Wheelset Inspection Angelique Raude , Evident Scientific, USA	Detection of Executed Maintenance Work Based on Longitudinal Level Characteristics Jan Schatzl , Institute of Railway Engineering and

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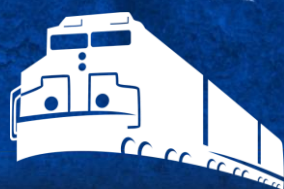
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	Dr Anders Ekberg , Chalmers University of Technology, Sweden	Indira Soier de Oliveira , VLI Logística, Brazil		Daly Souissi , Evident Scientific, USA	Transport Economy, Graz University of Technology, Austria Markus Loidolt , Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria
11:10am	BREAK				
11:20am-12:20pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL				
	Implementing Advanced Track Geometry Measurement Systems to Achieve over 80% reduction in Derailments Saluza Almeida de Oliveira, Eramet, Setrag, 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 Robust Track Following for UAV based Inspection Toma Sucin, Unmanned Systems & Robotics Laboratory, University of South Carolina, USA Lidar – The Ultimate Purpose Tool for Track Inspection Thomas Lee, Zetica, UK Broken Rail - Risk Management for the Future Roy Leslie, Siemens Mobility, Australia Financial & Economic Impact on Heavy Haul Maintenance Crisis & Well Engineered Solutions Through Basic Condition Assessment Philosophy Katlego Lekala, Transnet Freight Rail, South Africa Analysis of Tamping Cycles Based on the Conditions of Railways Components Dr Nithurshan Nadarajah, Institute of Railway Technology, Monash University, Australia Track Stiffness Variation Detection through Onboard Dynamic Response Analysis and Hybrid Signal Processing Techniques Reza Naseri Motlagh, Molinaroli College of Engineering and Computing, University of South Carolina, USA Accounting for Spatially Varying Track Conditions in Derailment Risk Assessment Brennan Gedney, University of South Carolina, USA				
	TRACK/RAILS	TRACK/CONCRETE SLEEPERS	ROLLING STOCK	RAIL OPERATIONS	TRACK INSPECTION
11:20am	Opening Comments by Session Chair Uwe Ossberger, voestalpine, Austria	Opening Comments by Session Chair Adam Bankston, BNSF Railway, USA	Opening Comments by Session Chair Maureen Werner, MxV Rail, USA	Opening Comments by Session Chair Hai Huang, University of Penn State, USA	Opening Comments by Session Chair Dr Fabian Hansmann, Plasser & Theurer, Austria
11:25am	Computational Analysis of Subsurface Crack Growth in Railway Rails Under Cyclic Loading Sina Saberi, Texas A&M University, USA	Experimental Study on the Vibration Damping Performance of Concrete Sleeper with under Sleeper Pad for Ballasted Track in Heavy Haul Railway Dr Ruilin You, China Academy of Railway Sciences Corporation (CARS), China	Safetruck: Detecting Wagon Damping Inefficiencies Using a Laser-Based Detection System Caroline Martins Masso, Rumo Logística, Brazil Mauro de Lara Filho, Rumo Logística, Brazil	Long Term Track Intrusion Detection Data Evaluation and Technical Consequences Dr Sven Scholz, TUD University of Technology Dresden, Germany	The DNA of Track Defects: Using String Sequencing Techniques to Identify Early-Stage Sinusoidal Rail Gauge Side Wear Astrid Lambrechts, Transnet Freight Rail, South Africa Mohammad Ridhaa Dien, Transnet Freight Rail, South Africa

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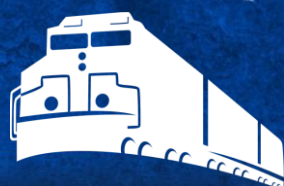
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2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

11:45am	Induction Tempering of WEL Formed by Grinding on TR68 Rail Dr Julio Neves , Universidade Tecnológica Federal do Paraná, Brazil	Under Sleeper Pads as a Countermeasure to The Low Frequency Vibration in Soft Soil Areas Antti Pelho , Research Centre Terra, Tampere University, Finland	Evaluation of Electric Return Current Distribution in AC Rail Networks to Mitigate System Failures in Heavy Haul Trains Itumeleng Fanampe , Transnet Freight Rail, South Africa	Safety Simulation Analysis and Experimental Study on Track and Bridge Structure Under 30,000-Ton Heavy Haul Train Dr Zhen Pan , China Academy of Railway Sciences (CARS), China	A New Methodology for Track Quality Assessment Incorporating Defect Shape Dr Elias Kassa , Institute of Railway Technology, Monash University, Australia
12:05pm	Crack Growth Guidelines for Magic Wear Rate – Swedish Case Study Jonathan Leung , Department of Engineering Mechanics, KTH Royal Institute of Technology, Sweden	Factors Affecting Mechanical Strength Loss of Concrete Ties in Brazil Dr Eliane Betânia Carvalho Costa , Federal University of Uberlândia, Brazil Maria Euarda Guedes Coutinho , Federal University of Uberlândia, Brazil	Implementation of Infrequent Overload 44.05 TAL Limit on Existing Rolling Stock Ksenija Stanic-Colic , Roy Hill Holdings, Australia	Integration of Wayside Defect Detectors and Train Control Systems David Khasenye , MxV Rail, USA Chase Askins , MxV Rail, USA	Innovative Track Structural Inspection Strategy to Improve Detection of High-Risk Conditions Prof Ted Sussmann , University of Hartford, USA
12:25pm	LUNCH, EXHIBITION NETWORKING & IHHA ePOSTERS				
12:20pm-1:35pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL				
	Assessment of Hazardous Materials Train Derailment in Multimodal Freight Terminals Mohammad Mehdi , University of Alberta, USA Enhancing Railway Safety and Maintenance Through Advanced Distributed Fiber Optic Acoustic Sensing Dr Bernd Drapp , AP Sensing, Germany Tensor Mining of Public Railroad Accident Reports Miguel Gutierrez , University of California Riverside, USA Application of Machine Learning and Acoustics in Wheel Crack Detection Petrus Schalk van der Walt , Transnet, South Africa Michael Maseko , Transnet, South Africa Integrated Analysis Methodology for Predictions of Maintenance Services in Insulating Joints Applied on the Carajás Railway Allan James Ferreira Maciel , Vale, Brazil Static and Dynamic Stiffness in Railway Bogies: Evolution of Dynamic Models Raidam Pereira Fernandes , Vale, Brazil Methodology Validation for Evaluating Friction Modifiers in Laboratory and Field Pedro Del Negro Tayer , Universidade Tecnológica Federal do Paraná, Brazil Eric Pretti , Vale, Brazil Development of a Laboratory-Based Protocol for the Pre-Selection of Heavy Haul Railway Lubricating Greases Bruno Pereira Ferrer , Universidade Tecnológica Federal do Paraná, Brazil Eric Pretti , Vale, Brazil				
1:35pm-2:20pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL				
	Simulation and Optimization Approach to Identify Routes Maximizing the Decarbonization Potential of Battery Electric Locomotives Diwen Shi , The University of Texas at Austin, USA Apredictive Modeling Approach to Reduce Railway Level Crossing Incidents Dr Katleho R.M Mafokosi , Transnet Freight Rail, South Africa Predictive Detection of Embankment Failures due to Fly-Ash Material Sinegugu Mkhize , Transnet Rail Infrastructure Manager (TRIM), South Africa Enhancing the Safety and Reliability of Railroad Corridors Prone to Geohazards Using a Decision Support System				

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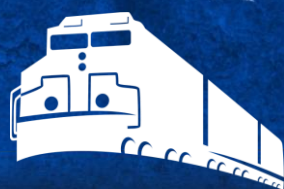
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	Colin N. Brooks, Michigan Tech Research Institute (MTRI), USA Assessing Climate Impact of Infrastructural Works Paola Reali, Italferr, Italy Gianluca Petrangeli Papini, Italferr, Italy Francesco Valerio Catania, Italferr, Italy Developing Methodology to Estimate WTW Impacts in Heavy Haul Transportation Vinod Bhatia, Ministry of Railways, Government of India				
2:20pm-2:40pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL				
	A Deep Neural Network for Broken Rail Prediction Using Multi-Source Data Dr Xiang Liu, Rutgers University, USA Dr Xin Wang, Tongji University, China The Quality of the Substructure as the Key to Success Julian A. Sigmund, TU Wien, Austria Advanced Imaging System for Railway Ballast Quality on South African Orelne Gculisile Mvelase, Council of Scientific and Industrial Research (CSIR), South Africa Material and Structural Performance Characteristics of Cementless Concrete-Based PSC Ties Nahyun Yi, Korea Railroad Research Institute, KRRI, Republic of Korea Younghoon Bae, Korea Railroad Research Institute, KRRI, Republic of Korea The Influence of Under Sleeper Pads in Railway Foundation Stress Reduction André Fardin Rosa, Rumo Logística, Brazil Comparison of Ballast Drainage Improvement Between Shoulder Cleaning and Cribbing Through Laboratory Flume Test Yufeng Gong, University of South Carolina, USA				
	TRACK/ RAILS & WELDS	TRACK/BALLAST & SUBGRADE	ROLLING STOCK/ MODELLING	VEHICLE TRACK SYSTEMS	TRACK MAINTENANCE
1:35pm	Opening Comments by Session Chair Dr Cong Qiu, Monash University, Australia	Opening Comments by Session Chair Yao Shan, Tonji University, China	Opening Comments by Session Chair Stan Gurule, MxV Rail, USA	Opening Comments by Session Chair Sabri Cakdi, Holland LP, USA	Opening Comments by Session Chair Kenza Soufiane, Loram, USA
1:40pm	Influence of Ferrous and Ferric Oxides in Aluminothermic Rail Welding on Weld Metallurgical Properties and Heat-Affected Zone Characteristics Matimba Shihambi, Transnet Rail Infrastructure Manager (TRIM), South Africa	Evaluating Particle Breakage in Geogrid Stabilized Ballast Phuriwit Jaikaew, University of South Carolina, USA	Mathematical Modeling and Simulation Techniques for Improved Heavy Haul Freight Operations John Deppen, Amsted Rail, USA	Bogie-Mounted Load Cells: A New Approach to Wheel Force Measurement Darren James, Transnet, South Africa	Track Surfacing Cycle for Heavy Haul Lanes with High Degradation Rates Rafael Pereira Kox, MRS Logística, Brazil
2:00pm	Using High Flow Preheater Device for Improvement in Mechanical Properties of Aluminothermic Welds Frédéric Delcroix, Pandrol, France	Stabilisation Tamping: An Early Intervention to Improve Track Quality Behaviour Florian Gerhold, Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria	Using AI Model for Constant Monitoring of Life Prediction of a Railcar Structure Matheus Lima Silva, Greenbrier Maxion, Brazil Rodrigo Muniz de Farias Cordeiro, Greenbrier Maxion, Brazil	Teleoperation System for Track Maintenance: Case Study of a Heavy Legacy Machine Guilherme Santa Esteves, TecWise Latam, Brazil	Hot Spot Milling as Cost-Effective Alternative to Rail Replacement Rahel Reinhardt, Vossloh Rail Services North America, Canada

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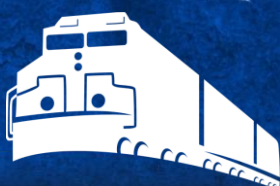
2:20pm	Effects and Degradation of Rails under Dynamic Gauge Widening Charles Rudeen , Loram, USA Tiago Tepedino , Loram South America, Brazil	Significance of Unsaturated Railway Foundation Materials for Increased Axle Loading GD (David) Mpye , University of Pretoria, South Africa	Unsupervised ML Techniques for Detecting Imbalances in Freight Railway Vehicles Cássio Bragança , Polytechnic School of the University of São Paulo, Brazil	Low-Cost Angle-Of-Attack Monitoring Using Existing Wim Data Eduard Reitmann , Transnet, South Africa	Impact of Rail Grinding in India's Dedicated Freight Corridors Sandesh Shrivastava , Dedicated Freight Corridor Corporation of India (DFCCIL), India
2:40pm		Assessing Track Stability Using Ballast Bulk Stress as a New Safety Indicator Dr Hai Huang , Penn State Altoona, USA Qifeng Yang , Penn State University Park, USA		Cross-Correlation Based Railway Change Detection: A Novel Approach J. Riley Edwards , University of Illinois – Urbana Champaign, USA Jose Augusto V.S. Ramos , Visiostack Inc, USA	Track Maintenance Strategies for Single-Line Heavy Haul Rail Freight Track: the MRS Experience Josué Cesar Bastos , MRS Logística, Brazil
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				

FRIDAY NOVEMBER 21, 2025 | OFFICIAL TECHNICAL SITE TOUR

7:30am	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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