2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

	MONDAY NOVEMBER 17, 2025 IHHA WORKSHOP
7:00am	MORNING COFFEE, NETWORKING & WORKSHOP 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
2.25	Prof Hannes Gräbe, University of Pretoria, South Africa
9:05am	Track Support Repair and Reinforcement
0.25am	Prof Ted Sussmann, University of Hartford, USA
9:35am	COFFEE BREAK & NETWORKING
10:00am	Track Buckling Due to Extreme Heat and Prevention
10:30am	Dr Steve Wilk, MxV Rail, USA Track Maintenance Methods for zili Stronger and More Sustainable Track from Supplier's Perspective (rails)
10.504111	Christopher Lidberg, Loram Maintenance of Way, 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	
	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
1:45pm	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
2.23pm	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
4.20	Ed Tilley, FTW Associates at Fossil Creek, USA
4:30pm	South Africa Approach to Train Control and Automation in Heavy Haul Operations
4:55pm	Stay tuned for further announcements
4.33pm	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
3.20piii	All + Paulo Vieira, PxV Rail Consulting, USA
5:40pm	IHHA WORKSHOP CONCLUSION
	THIN WORKSHOP CONCESSION



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

1:00pm- 6:00pm Broadmoor Hall	PRE-CONFERENCE REGISTRATION
5:30pm- 7:00pm Broadmoor	WELCOME COCKTAIL FUNCTION Sponsored by Rocky Mountain Steel Mills ROCKY MOUNTAIN STEEL MILLS

THESDAY NOVEMBER 18 2025

	TUESDAY NOVEMBER 18, 2025							
08:00am	MORNING COFFEE & NETWORKING							
08:30am	OPENING CEREMONY							
Broadmoor Hall B	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 Railroad, USA John Orr, Executive Vice President, Chief Operating Officer, Norfolk Southern, USA Dr Jasmin Bigdon, CTO, Deutsche Bahn, Germany Guilherme Mello, CEO, MRS Logística, Brazil Prof Mario Tartaglia, Head of Research, FS Italiane, Italy Moderator: William Vantuono, Editor-in-Chief, Railway Age, USA							
10:00am	COFFEE BREAK & EXHIBITION NETWORKING							
10:30am	OPENING CEREMONY							
Broadmoor Hall B	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							
	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL							



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

Low-cost Automated, Continuous Natural Vibration Structural Analysis using Al 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

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, Military Institute of Engineering (IME), Brazil Prof Antonio Silveira Lopes, Military Institute of Engineering (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



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

	SUSTAINABLE INNOVATION	BRIDGES & TUNNELS	ROLLING STOCK/WHEELS AND AXLES	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK/RAILS
1:00PM	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair
	Selva Karunakaran, Union Pacific Railroad, USA	Dr Gary Fry , Fry Technical Services, USA	John Deppen, Amsted Rail, USA	Darrien Welsby, Monash University, Australia	Daoxing Chen, Transportation Safety Board, Canada	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 (NRC), Canada	Member-Level Redundancy in a Riveted Steel Railroad Bridge Girder Christopher Johnson, MxV Rail, USA	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	Tunnel Portal Front Slope Displacement Monitoring Based on Beidou Technology Dr Jinfei Chai, Railway Engineering Research Institute, China Academy of Railway Sciences (CARS), China	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



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

1:45PM	Economic Viability of Hydrogen Fuel Cells in Brazilian Freight Railways: A Cost- Benefit Analysis Achila Mazini, University of Birmingham, UK	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	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 Logistíca, Brazil	Strategy For 17,200- Ton Train: Addressing Operational and Maintenance Challenges Camila Moscibrocki, Rumo Logistíca, Brazil Paula Giovanni Buba, Rumo Logistíca, 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		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			BRE	AK		
	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 (NRC), Canada	Opening Comments by Session Chair Prof Ted Sussmann, University of Hartford, 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 Railroad, USA
2:40PM	In-Field Locomotive Energy Measurement	Mastering Maintenance in	Investigation of Freight Railcar Air	Track Geometry Measurement	Automatic Train Operation of Long	In-Service Evaluation of Frog Design



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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, 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 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 Kuzmikova, 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-Kråik, Trafikverket and Luleå University of Technology, Sweden	
4:00PM			BRE	AK			
4.10PM		IHHA ePOSTE	R SESSIONS LOC	ATED IN THE EXH	IBITION 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						



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

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

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-Innovative Testing of Residual Stress of Railway Wheels 5:35pm

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

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, UTCRS, University of South Carolina, 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



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

	SUSTAINABLE INNOVATION	HEAVY HAUL UNDER EXTREME CONDITIONS	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK
4:10PM	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair
	David Brabb , Federal Railroad Administration, USA	Prof Andrew Quinn, University of Birmingham, UK	Prof Maksym Spiryagin, CQUniversity, Australia	Dr Emma Molobi, Transnet, South Africa	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 Logistica, Brazil
4:35PM	Non-Contact Energy Harvester for Rural Grade Crossings Prince Mensah, UTCRS, University of South Carolina, 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, National Research Council (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 Dr John Spencer, Pandrol, UK	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 Raiway 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, Indian Institute of Technology Roorkee, India Prof Suraj Prakash Harsha, Indian Institute of Technology Roorkee, India
5:35PM		CLOS	SE OF CONFERENCE SES		
5:35PM- 7:00PM		EXHIBI	TION NETWORKING RE Available to sponsor	CEPTION	



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

	WEDNESDAY NOVEMBER 19, 2025									
7:30am		WOMEN IN RAI	L BREAKFAST Sp	onsored by Wabte	ec Corporation					
	Panelists: Kari Gon: Kate Holling, Gener Gina Trombley, Exc Sharon Odetunde,	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 Sharon Odetunde, Head of Partnerships, RSSB, UK Moderator: Tiffany Wenrich, Education Chair, League of Railway Women, USA								
8:30am			MORNING	PLENARY						
Broadmoo Hall B	Reynote	naging Director Pail	Port & Coro Sorvices	, Rio Tinto Iron Ore,	Australia					
	-									
	Panelists: Luisa Mo Giorgio Travaini, E Dr Masamichi Soga Professor Ravi Rav David de Almeida,	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, Belgium 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		COF	FEE BREAK & EXH	IBITION NETWORK	(ING					
		IHH	A PARALLEL TECH	HNICAL 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	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair				
	Dr Dimitris Rizos, UTCRS, University of South Carolina, USA	John Cookson, Monash University, Australia	Devin Sammon, MxV Rail, USA	Zili Li, Delft University of Technology, The Netherlands	Francesco Jacobini, University of Illinois Urbana-Champaign	Steve Ashmore, Union Pacific Railroad, 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 Corporation, USA USA	Enhancing Human Factors Through Automated Risk Profiling in Heavy Haul Operations Nelisiwe Buhle Tembe, Transnet Rail Infrastructure Manager (TRIM), South Africa	Spike Fatigue Life Based on In-Track Load Measurements Yin Gao, MxV Rail, USA				



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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 Be Optimizati Heavy Hau Applicatio Daniel Blas Timken Co USA Malayil Su Kumar, Tir Engineering Research In	ion for II ns sko, The mpany, resh nken g &	Using Simul and In-Field Monitoring Improve Rai Performance Darrien Wel Institute of R Technology, Monash Univ Australia	to il e sby, Railway	Human Factors Management Program for Railway Operato Applying Aviatio Techniques to Improve Performance and Safety in Rail Operation Joubert Costa, M Logística, Brazil	on d	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	Multisourc Fracture A and Mainte Intervals Realignme Bearings in Gearbox o haul Locor Zhewei Zh China Acad Railway Sci Corporatio China	enalysis enance ent of n the f Heavy- motive ang, lemy of ences	Track Defection U Data Collect from Instruit Railway Veh Arthur Canc Pires, Univer Campinas (Unicamp), B Leonardo Ta Lima Franco University of Campinas (Unicamp), B	sing ted mented nicles cellieri rsity of grazil adeu	Interoperability Harmonisation of National Rail Signalling Syste across Australia Teck Lee, Bluefir Australia	of a m	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				BRI	AK				
10:55am		IHHA ePOSTE	R SESSIO	NS LOC	ATED IN T	HE EXH	IBITION HALL		
	Reliability analysis ar Gustavo Grzybowski Glayson Carlos Ramo Automated System fo Nikita Gorshkov, JSC \ Alternative Fuels	da Silva, Rumo Logisti s, Rumo Logistica, Bra: r Professional Develo	ca, Brazil zil ppment in Ra	ailway Trac		Supply: Fro	om Simulation to	Real-	World Application
	Ashish Kumar Gupta, Kamlesh Tomar, Rese Building Digital World	arch Design Standard (Organisation	(RDSO), Mi	nistry of Railv	vays, Gove	ernment of India	dia	
	Dr André Broekman, A Energy Balance Mode Dr Rick Vandoorne, A	lling for Guiding the	Fransition to	o Battery-E	lectric Locom	notives			
	Enhancing Safety and Dietmar Maicz, Hottin	Efficiency in Heavy H		erations T	nrough On-Ti	rack Meas	surement of Whee	l Def	ects
	Updates on Locomotic Luis Deltregia, MRS Lo		nitiatives						
	TRACK/CWR	HEAVY HAUL EXTREME CONI			E TRACK TEMS	RAIL C	PERATIONS		TRACK/ WELDING
10:55am	Opening Comments b Session Chair		nts by	Opening C by Session	omments	Opening Session	Comments by Chair		ning Comments by ion Chair
	Robert Wilson, Federa Railroad Administratio USA			Joshua Mc BNSF Railw		Adam KI MxV Rail			y Jones , Rail, USA



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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 Logistica, Brazil Larissa Padilha Lacerda, Rumo Logistica, 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	Al-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, EXHIBITI	ON NETWORKING &	- •	
12:20pm		IHHA ePOSTER SESSIO	ONS LOCATED IN T	HE EXHIBITION HALL	
	Computer Vision Applied Marcelo Augusto, MRS Lo	l to Turnout Inspection with	Drone		
	= '	iic weld behavior through mi ol, France	icro-structure and mold (geometry modification	
	Field-Based Assessment Francesco Marangon, TU	of Rail Fixations Behaviour U Graz, Austria	Inder Torsional Loads		
	- ,	metry Parameter Measureme	ent with Zero Speed Trac	k Geometry Measurement	System
		g practice on the Iron Ore Lin fikverket, Swedish Transport A			
		e Function for Heavy Haul Ra atory of Rail Transit Vehicle Sy		University, China	
		de Solutions for Weak Subsoi i, University of Campinas, Braz			
	Leveraging AI and Image Kagiso Letlala, AECOM. So	Processing for Predictive Trouth Africa	ack Maintenance		
		e <mark>rformance Life Extension of</mark> perg Sersa North America, USA		and Plain Line Timber Tie	25



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

	SUSTAINABLE	MOTIVE POWER,	ROLLING STOCK	VEHICLE TRACK	RAIL	TRACK/
	INNOVATION	TRACTION & EFFICIENCY		SYSTEMS	OPERATIONS	INSPECTION
1:00pm	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair
	Alejandro Alvarez- Reyes, ENSCO, USA	James Petty, Aurizon, Australia	Session Chair Jay Monaco, Amsted Rail, USA	Richard Stock, Plasser American Corporation, USA	Andrea Berry , CN, Canada	Silvia Galvan-Nunez, 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 Prof 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	Forward-Facing Camera System Using Artificial Intelligence-Based Image Processing for Train Protection Derel Wust, 4AI Systems, USA Mark Wood, 4AI Systems, Australia	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 Pereira 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 Dr Ulrich Spangenberg, MxV Rail, USA	Deep Reinforcement Learning Applied to Flat Yard Shunting Optimization Rael Andretto, MRS Logística, Brazil	Update on Canadian Research to Develop a 3D Laser and Al 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	Simulation of Wheel-Rail Friction Identification Using Instrumented Revenue Vehicles (IRVs) Kevin David Oldknow, Simon Fraser University, Canada	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 Sibusiso Ntuli, Transnet Freight Rail, South Africa	Measuring Freight Throughput for Locomotive Forecasting Needs Sakshna Sivnarain, 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



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

2:25pm			BRI	EAK		
	SUSTAINABLE INNOVATION	MOTIVE POWER, TRACTION & EFFICIENCY	ROLLING STOCK	VEHICLE TRACK SYSTEMS	RAIL OPERATIONS	TRACK
2:35pm	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair
	Heikki Luomala, Tampere University, Finland	Makoto Akama, Osaka Sangyo University, Japan	Alberto Ronchi, Luccini, Italy	Dr Alfredo Núñez Vicencio , TU Delft, The Netherlands	Prof Ravi Ravitharan Monash University, Australia	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	Strengthening Safety in Constant Warning Time Grade Crossing Signaling Applications Guilherme Rodrigues, MRS Logística, Brazil Conrado Nunes, MRS Logística, Brazil	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 Jesper Westerberg, Predge AB, Luleå University of Technology, Sweden	Case Studies Using Vehicle-Track Interaction Digital Twins for Maintenance Decisions Dr Ankur Ashtekar, Loram Technologies, USA	Untapped Potential of Mass-collected Rail Profiles Gustavo Dias Silva, Global Rail North America, Canada	Field Experimentation Quantifying Rail Creep in a Steep- Grade Curve Jose Gustavo 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	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	Concrete Sleeper Life Cycle Management Strategy Surendra Bisht, Aurecon, Australia Leon Wessels, Rio Tinto, Australia	Implementation of Infrequent Overload 44.05 TAL Limit on Existing Track Infrastructure Ksenija Stanic-Colic, Roy Hill Holdings, Australia



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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 laan 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 Loponen, Research Centre Terra, Tampere University, Finland	Canadian National Autonomous Track Inspection Program (CN ATIP) Tarek Shalaby, ENSCO Rai, USA Andrea Berry, CN, Canada		SILETIE: Heavy Haul Crossties Mechanical Monitoring, A Study of Case Dr Arindom Saha, Sileto Technology, USA
4:00pm			BRE	AK		
	SUSTAINABLE INNOVATION Opening Comments by	TRACK/ WELDING Opening Comments	ROLLING STOCK Opening Comments	VEHICLE TRACK SYSTEMS Opening Comments	RAIL OPERATIONS Opening Comments	TRACK/SLEEPERS & FASTENERS Opening Comments by
4:10pm	Session Chair Christopher Lidberg, Loram Maintenance of Way, USA	by Session Chair Joe Kristan, Rocky Mountain Steel Mills, USA	by Session Chair Yi Wang, MxV Rail, USA	by Session Chair Anders Ekberg, Chalmers University of Technology, Sweden	by Session Chair Joe Brosseau, MxV Rail, USA	Session Chair Yin Gao, MxV Rail, USA
4:15pm	Climate Resilience and Geohazard Assessment of Heavy Haul Corridors Using Space Technology Skevi Perdikou, Geofem, Cyprus	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	Chracterisation of As Cast and Heat-Treated Grade B Castings Microstrctures Using Ultrasonic Testing Austin Ndhambi, Transnet Engineering, South Africa	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	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 Oliveira Lima, RailTEC, University of Illinois at Urbana-Champaign, USA
4:55pm	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	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	EMAT Technology for In-Motion Wheel Inspection	Cost-Benefit Analysis of Traditional and Semi-Mechanized Ballast Track Construction Using Discrete Event Simulation Hossein Taheri, Georgia Southern University, USA	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



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

5:15pm	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	Application for Advanced Analytics Nikheil Bryan Singh, Transnet Freight Rail,	Machine Learning for Predictive Modeling of Crosstie Degradation: Key Factors in Forecasting Remaining Service Life Dr Kenza Soufiane, Loram Maintenance of Way, USA	
5:35pm		CLOSE OF CONFE	RENCE SESSIONS		
6:30pm- 9:30pm Int'l Center	GALA DINNER Sportsored by Flasser & Flictici				

		THURSDAY	NOVEMBER 20, 2	2025		
7:30am	MORNING COFFEE, NETWORKING & REGISTRATION					
		IHHA PARAL	LEL TECHNICAL SESS	IONS		
	TRACK/CWR	BRIDGES	ROLLING STOCK	TRACK/BALLAST& SUBGRADE	TRACK/ TURNOUTS	
8:30am	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	
	Dr Francesco Lanza di Scalea, University of California, USA	Dr Duane Otter , MxV Rail, USA	Dr Ulrich Spangenberg, MxV Rail, USA	Dustin Lange, Norfolk Southern, USA	Dr 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 Dr Alfredo Núñez Vicencio, Delft University of Technology, The Netherlands Dr Chen Shen, 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	,	
8:55am	Development of Method for Track Buckle Hotspot Identification Using Geometry and Laser Based Data Arthur de Oliveira Lima, RailTEC, University of Illinois at Urbana-Champaign, USA J. Riley Edwards, University of Illinois – Urbana Champaign, USA	World Directory, New Indices for Safety Management Éric Auzolles, Ministry of Transport and Sustainable	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	



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

9:15am					
9.13am	Factors Affecting Lateral Resistance and Track Buckling Dr Heikki Luomala, Research Centre Terra, Tampere University, Finland	Short-Span Steel Railway Bridge Concepts for Heavy-Haul Systems Dr Gary Fry, Fry Technical Services, Inc., USA	A New Approach to Transnet's HS MK V Bogies: Transitioning from Casting to Fabrication Cherise Rachel Govender, Transnet Freight Rail, South Africa Sheraton Singh, Transnet Freight Rail, South Africa	Non-Destructive Methods to Assess Subgrade and Track Construction Quality Asger Eriksen, Zetica Limited, UK	Comparative Analysis of Operational Performances 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 Dimitris Rizos, UTCRS, University of South Carolina, 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		
			DILLAIN		
	TRACK/CWR	SUSTAINABLE INNOVATION	TRACK/ SUBGRADE	RAIL, WHEEL & AXLE INSPECTIONS	TRACK MAINTENANCE
10:05am	Opening Comments by Session Chair	INNOVATION Opening Comments by Session Chair	TRACK/ SUBGRADE Opening Comments by Session Chair	INSPECTIONS Opening Comments by Session Chair	Opening Comments by Session Chair
10:05am	Opening Comments by Session Chair Jonathan Leung, KTH Royal Institute of Technology, Sweden	INNOVATION Opening Comments by	TRACK/ SUBGRADE Opening Comments by	INSPECTIONS Opening Comments by	Opening Comments by
10:10am	Opening Comments by Session Chair Jonathan Leung, KTH Royal Institute of Technology, Sweden	INNOVATION Opening Comments by Session Chair Antonio Merheb, MRS Logistica, Brazil Renewable Energy Integration for Heavy Haul Traction Loads Patrick Croucamp, Transnet Rail Infrastructure Manager (TRIM), South Africa	TRACK/ SUBGRADE Opening Comments by Session Chair Deb Mishra, Virginia Tech, USA Union Pacific Railroad's Integrated Strategies for Roadbed Maintenance and Geohazard Management Rachel Beck, Union Pacific Railroad, USA	INSPECTIONS Opening Comments by Session Chair Dr Ananyo Banerjee, MxV Rail, USA Manufacture of Rail-Nondestructive Testing for Acceptance and Characterization Greg Garcia, Rocky	Opening Comments by Session Chair Franco Fanucci, Loram



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

10:50am	Rail Break and Track Buckling Risk Assessment after Derailment Reconstruction Dr Anders Ekberg, Chalmers University of Technology, Sweden	Railway Efficiency and Sustainability through Condition-Based Maintenance Glauber Sterdi Luiz, VLI Logística, Brazil Indira Soier de Oliveira, VLI Logística, Brazil	Soil-Binder Mixtures Dr Abdoul Aziz Diene, Vale, USA	A Comprehensive Solution for Railway Wheelset Inspection Angelique Raude, Evident Scientific, USA Daly Souissi, Evident Scientific, USA	Detection of Executed Maintenance Work Based on Longitudinal Level Characteristics Jan Schatzl, 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	
11:10am			BREAK			
11:20am- 12:20pm		IHHA ePOSTER SESSI	ONS LOCATED IN T	HE EXHIBITION HALL		
	Implementing Advanced Tra Saluza Almeida de Oliveira,		it Systems to Achieve over	80% reduction in Derailme	ents	
	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 Manageme Roy Leslie, Siemens Mobility,					

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, Universit	y of South Carolina, USA			
	TRACK/RAILS	TRACK/	ROLLING STOCK	RAIL OPERATIONS	TRACK INSPECTION
		CONCRETE SLEEPERS			
11:20am	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair	Opening Comments by Session Chair
	Uwe Ossberger, voestalpine, Austria	Adam Bankston, BNSF Railway, USA	Maureen Werner, MxV Rail, USA	Dr Hai Huang, Pennsylvania State University, USA	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	Safetruck: Detecting Wagon Damping Inefficiencies Using a Laser-Based Detection System Caroline Martins Masso, Rumo Logistica, 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 Lambrechs, Transnet Freight Rail, South Africa
		Academy of Railway Sciences Corporation (CARS), China	Mauro de Lara Filho , Rumo Logistica, Brazil		Mohammad Ridhaa Dien, Transnet Freight Rail,



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 Técnologica 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	Positive Train Control Response to Wayside Detector 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, EXHIBITI	ON NETWORKING &	IHHA ePOSTERS		
12:20pm- 1:35pm		IHHA ePOSTER SESSION	ONS LOCATED IN TH	HE EXHIBITION HALL		
	Assessment of Hazardous Mohammad Mehdi, Univers	Materials Train Derailment i ity of Alberta, USA	in Multimodal Freight Ter	minals		
	Enhancing Railway Safety a Dr Bernd Drapp, AP Sensing	and Maintenance Through A g, Germany	dvanced Distributed Fiber	r Optic Acoustic Sensing		
	Tensor Mining of Public Ra Miguel Gutierrez, University	ailroad Accident Reports y of California Riverside, USA				
	Application of Machine Learning and Accoustics in Wheel Crack Detection Petrus Schalk van der Walt, Transet, South Africa Michael Maseko, Transet, 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					
	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					



Analysis of tamping Cycles Based on the Conditions of Railways Components

Larissa Padilha Lacerda, Rumo Logistica, Brazil

Gabriel Lima, Rumo Logistica, Brazil

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

1:35pm- 2:20pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL						
·		imulation and Optimization Approach to Identify Routes Maximizing the Decarbonization Potential of Battery Electric Locomotives Diwen Shi, The University of Texas at Austin, USA					
		r <mark>oach to Reduce Railway Lev</mark> ransnet Freight Rail, South Af					
		oankment Failures due to Fl Rail Infrastructure Manager (⁻					
		eliability of Railroad Corridect Research Institute (MTRI),		ing a Decision Support Sys	stem		
	Assessing Climate Impact of Paola Reali, Italferr, Italy Gianluca Petrangeli Papini, Francesco Valerio Catania,	Italferr, Italy					
	Developing Methodology to Vinod Bhatia, Ministry of Ra	DESTIMATE WTW Impacts in I Ilways, Government of India	Heavy Haul Transportation				
2:20pm- 2:40pm		IHHA ePOSTER SESS	IONS LOCATED IN TH	E 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 Oreline Gculisile Mvelase, Council of Scientific and Industrial Research (CSIR), South Africa					
	Nahyun Yi, Korea Railroad R	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 Logistica, Brazil					
		Comparison of Ballast Drainage Improvement Between Shoulder Cleaning and Cribbing Through Laboratory Flume Test Yufeng Gong, University of South Carolina, USA					
	TRACK/ RAILS &	TRACK/BALLAST &	ROLLING STOCK/	VEHICLE TRACK	TRACK MAINTENANCE		
1:35pm	WELDS Opening Comments by Session Chair	SUBGRADE Opening Comments by Session Chair	MODELLING Opening Comments by Session Chair	SYSTEMS Opening Comments by Session Chair	Opening Comments by Session Chair		
	Dr Cong Qiu, Monash University, Australia	Yao Shan , Tonji University, China	Stan Gurule, MxV Rail, USA	Sabri Cakdi, Holland LP, USA	Kenza Soufiane , Loram Maintenance of Way, USA		
1:40pm	Influence of Ferrous and	Evaluating Particle	Mathematical Modeling	Bogie-Mounted Load	Track Surfacing Cycle		



and Simulation

Techniques for

Rail, USA

Improved Heavy Haul

John Deppen, Amsted

Freight Operations

Cells: A New Approach

Transnet, South Africa

to Wheel Force

Measurement

Darren James,

for Heavy Haul Lanes

Rafael Pereira Kox,

MRS Logística, Brazil

Rates

with High Degradation

Ferric Oxides in

Welding on Weld

Characteristics

Africa

Matimba Shihambi, Transnet Rail Infrastructure Manager (TRIM), South

Aluminothermic Rail

Metallurgical Properties

and Heat-Affected Zone

Breakage in Geogrid

Stabilized Ballast

Phuriwit Jaikaew,

University of South

Carolina, USA

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

2:00pm	Using High Flow Preheater Device for Improvement in Mechanical Properties	Stabilisation Tamping: An Early Intervention to Improve Track Quality Behaviour	Using AI Model for Constant Monitoring of Life Prediction of a Railcar Structure	Teleoperation System for Track Maintenance: Case Study of a Heavy Legacy Machine	Hot Spot Milling as Cost-Effective Alternative to Rail Replacement
	of Aluminothermic Welds Frédéric Delcroix, Pandrol, France	Florian Gerhold, Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria	Matheus Lima Silva, Greenbrier Maxion, Brazil Rodrigo Muniz de Farias Cordeiro, Greenbrier Maxion, Brazil	Guilherme Santa Esteves, TecWise Latam, Brazil	Rahel Reinhardt, Vossloh Rail Services North America, Canada
2:20pm	Effects and Degradation of Rails under Dynamic Gauge Widening	Significance of Unsaturated Railway Foundation Materials for Increased Axle Loading	Unsupervised ML Techniques for Detecting Imbalances in Freight Railway Vehicles	Low-Cost Angle-Of- Attack Monitoring Using Existing Wim Data	Impact of Rail Grinding in India's Dedicated Freight Corridors Sandesh Shrivastava.
	Charles Rudeen, Loram Maintenance of Way, USA Tiago Tepedino, Loram South America, Brazil	GD (David) Mpye , University of Pretoria, South Africa	Cássio Bragança, Polytechnic School of the University of São Paulo, Brazil	Eduard Reitmann, Transnet, South Africa	Dedicated Freight Corridor Corporation of India (DFCCIL), India
2:40pm	Experimental Assessment of Fracture in Rails Due to Cyclic Loading	Assessing Track Stability Using Ballast Bulk Stress as a New Safety Indicator		Cross-Correlation Based Railway Change Detection: A Novel Approach	Track Maintenance Strategies for Single- Line Heavy Haul Rail Freight Track: the MRS
	Özant Özümert Bulguoğlu, Texas A&M University, USA	Dr Hai Huang, Pennsylvania State University, USA Qifeng Yang, Pennsylvania State University, USA		J. Riley Edwards, University of Illinois - Urbana Champaign, USA Jose Augusto Ramos, Visiostack Inc, USA	Experience Josué Cesar Bastos, MRS Logística, Brazil
3:00pm			& EXHIBITION NETWO	RKING	
		CLOS	SING CEREMONY		
3:30pm Broadmoor Hall B	Turning Ideas into Impact: How Supplier Leadership is Shaping the Rail Industry's Future Panelists: Thomas Blechinger, President & CEO, Plasser American Corporation, USA Robert Bremmer, Group Vice President, Product Management, Wabtec Corporation, USA Tom Praderio, Director of Engineering, Parallel Systems, USA Tim Hoare, Managing Director, APAC, Pandrol, Australia Stay tuned for more details Next IHHA + WCRR Conference Announcements Awards and Closing Remarks				
5:35pm		CLOSE	OF CONFERENCE SES	SIONS	



2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

	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

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

