

IHHA C 2025

2025 JOINT CONFERENCE | RAIL RESEARCH WEEK

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

TUESDAY NOVEMBER 18, 2025	
07:30am	CONFERENCE REGISTRATION Broadmoor Hall
08:00am	MORNING COFFEE & EXHIBITION NETWORKING Bartolin Hall
08:30am	OPENING CEREMONY
Broadmoor Hall B	<p>Master of Ceremonies: Niki Toussaint, Senior AVP, Marketing & Education, MxV Rail, USA</p> <p>Welcome Ceremony and Address: Kari Gonzales, Chair, IHHA + President & CEO, MxV Rail, USA</p> <p>Keynote: Ian Jefferies, President and Chief Executive Officer, Association of American Railroads (AAR), USA</p> <p>The Innovation Pipeline: From Discovery to Deployment</p> <p>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: Kari Gonzales, Chair, IHHA + President & CEO, MxV Rail, USA</p>
10:00am	COFFEE BREAK & EXHIBITION NETWORKING Bartolin Hall
10:30am	OPENING CEREMONY
Broadmoor Hall B	<p>Keynote: Dr Alan Beroud, Chairman, UIC & CEO, Polish State Railways</p> <p>Tech on Track: Advancing Railway Safety Through Innovation</p> <p>Panelists:</p> <p>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</p> <p>IHHA Heavy Haul Award</p>
11:50am	LUNCH, EXHIBITION NETWORKING & IHHA ePOSTERS Bartolin Hall
12:20pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL
	<ol style="list-style-type: none"> 1. Agile Introduction of an End-to-End Cargo Operation Software at SBB Cargo Nicki Skujat, DXC Technology, Germany Dr Thomas Albrecht, DXC Technology, Germany 2. Innovative Testing of Residual Stress of Railway Wheels Pieter Conradie, Stellenbosch University, South Africa 3. Graph-Based Testbed for Vulnerability Analysis of the US Rail Infrastructure Network Sergio Martinez, University of Texas Rio Grande (UTRGV), USA 4. Delay and Required Infrastructure Investment to Landing and Switching Freight Trains Within Port Terminals Darkhan Mussanov, DB ECO North America, USA 5. Fatigue Life Analysis of Railway Couplers Using Rainflow Method Camila Moscibrocki, Rumo Logistica, Brazil 6. Simulation and Optimization Approach to Identify Routes Maximizing the Decarbonization Potential of Battery Electric Locomotives Diwen Shi, The University of Texas at Austin, USA

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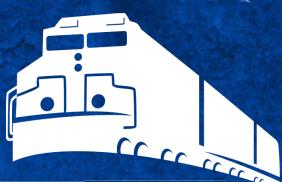
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12:50pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL
	<ol style="list-style-type: none">1. The Quality of the Substructure as the Key to Success Julian A. Sigmund, TU Wien, Austria2. Enhancing the Safety and Reliability of Railroad Corridors Prone to Geohazards Using a Decision Support System Colin N. Brooks, Michigan Tech Research Institute (MTRI), USA Abdul-Rashid Zakaria, University of Mississippi, USA3. 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 India4. Computer Vision Applied to Turnout Inspection with Drone Josué Cesar Bastos, MRS Logística, Brazil Rafael Pereira Kox, MRS Logística, Brazil5. Field-Based Assessment of Rail Fixations Behaviour Under Torsional Loads Francesco Marangon, Institute for Railway Infrastructure Design, Graz University of Technology, Austria6. Uninterrupted Track Geometry Parameter Measurement with Zero Speed Track Geometry Measurement System Bernhard Karl Metzger, ENSCO, USA

IHHA PARALLEL TECHNICAL SESSIONS

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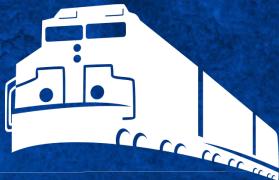
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	SUSTAINABLE INNOVATION Broadmoor Hall BH-C	RAIL OPERATIONS Broadmoor Hall BH-D	ROLLING STOCK /WHEELS + AXLES Broadmoor Hall BH-E	TRACK/RAILS Broadmoor Hall BH-F	VEHICLE TRACK SYSTEMS Bartolin Hall BE-207	BRIDGES & TUNNELS Bartolin Hall BE-210
1:00PM	Opening Comments by Session Chair Selva Karunakaran, Union Pacific Railroad, USA	Opening Comments by Session Chair Daoxing Chen, Transportation Safety Board, Canada	Opening Comments by Session Chair John Deppen, Amsted Rail, USA	Opening Comments by Session Chair Greg Garcia, Rocky Mountain Steel Mills, USA	Opening Comments by Session Chair Darrien Welsby, Monash Institute of Railway Technology, Australia	Opening Comments by Session Chair Dr Gary Fry, Fry Technical Services, USA
1:05PM	Interoperable Energy Management Systems and Improvements in Operational Consistency Shad Pate, MxV Rail, USA	Evolution of North American Railroads' Head-of-Train and End-of-Train System Bivesh Paudyal, 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	High-hardness Pearlite Steels: Experimental Study of Wear and Rolling Contact Fatigue Damage and Rail Performance on Actual Tracks Kenta Watari, Nippon Steel, Japan	Automatic Driving Curve Optimization Method of Heavy-Haul Train Based on Deep Reinforcement Learning Dr Ruilin You, China Academy of Railway Sciences Corporation (CARS), China	Member-Level Redundancy in a Riveted Steel Railroad Bridge Girder Christopher Johnson, MxV Rail, USA
1:25PM	From Detection to Action: Locomotives Requesting Maintenance without Human Intervention Pedro Mageste, MRS Logística, Brazil	Strategy For 17,200-Ton Train: Addressing Operational and Maintenance Challenges Camila Moscibrocki, Rumo Logística, Brazil	Advancement in Understanding Wheel Failures in North American Freight Railways: Following the Roadmap Dr Mohamad Ghodrati, ENSCO, 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	Measurement and Operational Considerations against Deficiencies in Curve Transitions Mark Montoya, Union Pacific Railroad, USA Yi Wang, Simon Fraser University, Canada	Tunnel Portal Front Slope Displacement Monitoring Based on Beidou Technology Dr Jinfei Chai, Railway Engineering Research Institute, China Academy of Railway Sciences (CARS), China
1:45PM	Aurizon's Keystone – The Future of Asset Management James Petty, Aurizon, Australia Jared Chiesa, Aurizon, Australia		Study and Analysis of the Mechanism of Strengthening and Toughening in Micro-alloyed Railway Freight Axles for Heavy Haul Applications Dr Yi Wu, China Academy of Railway Sciences Corporation (CARS), China	Oftoten 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	COFFEE BREAK & EXHIBITION NETWORKING Bartolin Hall					

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2:35PM	Opening Comments by Session Chair Albert Wahba, National Research Council (NRC), Canada	Opening Comments by Session Chair Makoto Akama, Osaka Sangyo University, Japan	Opening Comments by Session Chair Dr Qing Wu, CQU University, Australia	Opening Comments by Session Chair Michael Gilliam, Union Pacific Railroad, USA	Opening Comments by Session Chair Charity Duran, BNSF Railway, USA
2:40PM	In-Field Locomotive Energy Measurement Campaign Supporting Energy Balance Modelling Validation Andrew Wilson, BHP, Australia	Improved Digital Communications in Locomotive Consists Through Locomotive Communications Cable David Hunter, MxV Rail, USA	Investigation of Freight Railcar Air Brake Performance in Cold Temperatures Alok Jahagirdar, National Research Council (NRC), Canada	In-Service Evaluation of Frog Design Features Dr Duane Otter, MxV Rail, USA	Rail Side Wear of Switch Tip Area and Its Effect on Derailment Risk Riku Varis, Research Centre Terra, Tampere University, Finland
3:00PM	Heavy Haul Locomotive Path for Decarbonization and Zero Emissions Guilherme Martini, Wabtec Corporation, USA William Carnegie, Wabtec Corporation, USA	Autonomous Supervised Operation: Railway Automation in Brazil Guilherme Augusto Schmidt da Silva, MRS Logística, Brazil	Research and Application of Vehicle Automatic Parking Brake Technology Ox Yu, Shanghai Allpass Railway Equipment Co, China	Longitudinal Rail Force Changes from Maintenance Near Turnouts Dr Stephen Wilk, MxV Rail, USA Adam Bankston, BNSF Railway, 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
3:20PM		Improving Resilience of Heavy Haul Railways through Real Time System Monitoring Prof Ravi Ravitharan, Monash Institute of Railway Technology, Australia	Effect of Brake Pipe Leakage on Brake Performance Dr Yi Wang, MxV Rail, USA	Simulating the Effect of Rail Surface Roughness on Rolling Contact Fatigue (RCF) Hans Boysen, Swedish Transport Administration, Trafikverket, Sweden	Dynamic Response to Track Geometry: Ride Quality vs. Safety Abel Ayele, University of Delaware, USA Dr Allan Zaremski, University of Delaware, USA
3:40PM		Enhancing the Range of Electrical Pulse Response Track Monitoring and Condition Diagnostics Tian Kunneke, HisWay Labs South Africa	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	Metallurgical Effects of Copper Deposition from Loose Bonding Cables on DC Traction Rails: Failure Mechanisms and Rail Integrity Implications Matimba Shihambi, Transnet Rail Infrastructure Manager (TRIM), South Africa	
4:00PM	BREAK				
4:10PM	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL				
4:10-4:40pm	<ol style="list-style-type: none"> Real-Time FRACAS for Enhanced Railway Operations and Predictive Maintenance Adi Dhora, Hottinger Brüel & Kjaer, USA High-Speed Rail Inspection by Non-Contact Sensing and Advanced Processing Dr Francesco Lanza di Scalea, University of California, USA 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 				

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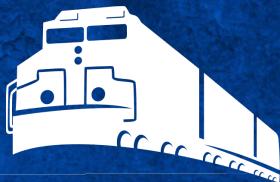
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	<p>5. Broken Wheels by Cracking of Wheel Webs – A Numerical Study on Combined Thermal and Mechanical Loading Tore Vernersson, Chalmers Railway Mechanics, Chalmers University of Technology, Sweden</p> <p>6. Improving aluminothermic weld behavior through micro-structure and mold geometry modification Dr Lionel Winiar, Pandrol, France</p>				
	SUSTAINABLE INNOVATION Broadmoor Hall BH-C	RAIL OPERATIONS Broadmoor Hall BH-D	TRACK Broadmoor Hall BH-F	VEHICLE TRACK SYSTEMS Bartolin Hall BE-207	HEAVY HAUL UNDER EXTREME CONDITIONS Bartolin Hall BE-210
4:10PM	Opening Comments by Session Chair Prof Ted Sussmann, University of Hartford, USA	Opening Comments by Session Chair Dr Emma Molobi, Transnet South Africa	Opening Comments by Session Chair Radim Bruzek, ENSCO, USA	Opening Comments by Session Chair Prof Maksym Spiriyagin, CQUniversity, Australia	Opening Comments by Session Chair Antonio Merheb, MRS Logística, Brazil
4:15PM	Reducing Risk and Emissions: Challenging M/W to Develop More Sustainable Maintenance Practices Sarah Mueller, Union Pacific Railroad, USA	Energy Efficiency in Long Haul Trains Guilherme Augusto Schmidt da Silva, MRS Logística, Brazil Daniel Ferreira da Fonseca, MRS Logística, Brazil	Methodology for Selecting Optimal Rail Grades Based on Performance and Life Cycle Costs Edson Jose Orlonski, Rumo Logistica, Brazil Tulio Faria Franca, Rumo Logistica, Brazil	Broken Wheel Derailments in Heavy Haul Operations: Investigation and Mitigation Strategies Michelle Jamieson, Transportation Safety Board of Canada (TSB), Canada	Study of Increased Fractures Associated with Temperature, Transported Volume and Rail Replacement Plan Rafael Pereira Kox, MRS Logística, Brazil
4:35PM	Non-Contact Energy Harvester for Rural Grade Crossings Prince Mensah, Iowa State University, USA	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 Ananya Banerjee, MxV Rail, USA	Rolling in the Desert: Heavy Haul wheels for Saudi Arabia Alberto Ronchi, Lucchini RS, Italy	Sustainable Innovation: A Rail Fastening System Developed to Increase Productivity, Reduce Costs and Improve Track Safety Dr John Spencer, Pandrol, UK
4:55PM	Incremental Diesel-Electric Freight Locomotive Conversions as a Pathway to Decarbonization Rydell Walther, University of Texas at Austin, USA	Analysis of Distributed Power, Train Length, and Derailment Rate Xinhao Liu, University of Illinois Urbana-Champaign, USA	Rail Surface Defect Detection Using Advanced Deep Learning Techniques Prof Suraj Prakash Harsha, Indian Institute of Technology Roorkee, India Kushagra Pant, Shiv Nadar University, India	Optimizing Heavy Haul Wheel Maintenance: Solid Tread Friction Modifiers from Lab Tests to Simulations and Field Implementation Aryan Houshmand, LB Foster, Canada Rob Caldwell, National Research Council (NRC), Canada	
5:15PM	Battery Electrification of the Flash-Butt Rail Welding Process Shane Mayhill, Holland, L.P., USA	Study on the Transportation Organization Plan of 30 000-ton Heavy-Haul Trains Running on Shuzhou-Huanghua Railway Dr Zhen Pan, China Academy of Railway Sciences Corporation (CARS), China			
5:35PM	CLOSE OF CONFERENCE SESSIONS				
5:35PM-7:00PM	EXHIBITION NETWORKING RECEPTION Bartolin Hall				

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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 Sharon Odetunde , Head of Partnerships, RSSB, UK Kimia Khatami , Director of Transload Strategy and Operations, CPKC, USA Moderator: Tiffany Wenrich , Education Chair, League of Railway Women, USA
8.00AM	MORNING COFFEE & EXHIBITION NETWORKING Bartolin Hall
8:30am	MORNING PLENARY
Broadmoor Hall B	Master of Ceremonies: Niki Toussaint, Senior AVP, Marketing & Education, MxV Rail, USA Keynote Richard Cohen , Managing Director Rail, Port & Core Services, Rio Tinto Iron Ore, Australia Driving Excellence: Harmonizing the Power of Research to Advance Railways Panelists: Luisa Moisio , Director of Research, RSSB, UK Giorgio Travaini , Executive Director, Europe's Rail Joint Undertaking, 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	BREAK

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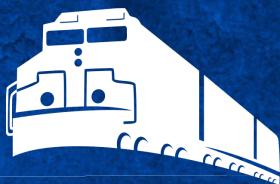
IHHA PARALLEL TECHNICAL SESSIONS

	RAIL OPERATIONS Broadmoor Hall BH-D	ROLLING STOCK/ BEARINGS Broadmoor Hall BH-E	TRACK/ COMPONENTS Broadmoor Hall BH-F	VEHICLE TRACK SYSTEMS Bartolin Hall BE-207	HEAVY HAUL UNDER EXTREME CONDITIONS Bartolin Hall BE-210
9:40am	Opening Comments by Session Chair Francesco Jacobini , University of Illinois Urbana-Champaign	Opening Comments by Session Chair Devin Sammon , MxV Rail, USA	Opening Comments by Session Chair Steve Ashmore , Union Pacific Railroad, USA	Opening Comments by Session Chair Dr Chen Shen , Delft University of Technology, The Netherlands	Opening Comments by Session Chair John Cookson , Institute of Railway Technology, Australia
9:45am	Interoperability and Harmonisation of a National Rail Signalling System across Australia Teck Lee , Bluefin3, Australia	Effects of Sidebearer & Bearing Characteristics on Angle of Attack Shabbir Hussain , Wayside Inspection Devices Inc, Canada	Spike Fatigue Life Based on In-Track Load Measurements Yin Gao , MxV Rail, USA	Enhancing Operations Resilience and Sustainability through Technological Advancements in Rail Grinding Richard Stock , Plasser American Corporation, USA Dr Ash Athukoralalage , Speno Rail Maintenance, Australia	Impact of Sub-Freezing Conditions on Ballast Strength: A Laboratory Study Coleman Froehlke , University of Illinois - Urbana Champaign, USA
10:05am	Human Factors Management Program for Railway Operators: Applying Aviation Techniques to Improve Performance and Safety in Rail Operation Joubert Costa , MRS Logística, Brazil	Journal Bearing Optimization for Heavy Haul Applications Daniel Blasko , The Timken Company, USA Malayil Suresh Kumar , Timken Engineering & Research India, India	Improved Fishplate and Clamping System Requirements for Heavy Haul Railways Dr Cong Qiu , Institute of Railway Technology, Monash University, Australia	Using Simulation and In-Field Monitoring to Improve Rail Performance Darrien Welsby , Institute of Railway Technology, Monash University, Australia	Optimization of the Maintenance Plan for Geotechnical Assets through a Susceptibility Map Camilly Tostes , MRS Logística, Brazil
10:25am		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	An Innovative Insulated Rail Joint for Heavy Haul Applications Dr Andrea Bracciali , University of Florence, Italy Dr Gianluca Megna , University of Pisa, Italy	Track Defect Detection Using Data Collected from Instrumented Railway Vehicles Arthur Cancellieri Pires , University of Campinas (Unicamp), Brazil Leonardo Tadeu Lima Franco , University of Campinas (Unicamp), Brazil	
10:45am	COFFEE BREAK & EXHIBITION NETWORKING Bartolin Hall				

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	TRACK/CWR Broadmoor Hall BH-C	RAIL OPERATIONS Broadmoor Hall BH-D	TRACK/WELDING Broadmoor Hall BH-F
10:55am	Opening Comments by Session Chair Dr Dimitris Rizos , UTCRS, University of South Carolina, USA	Opening Comments by Session Chair Adam Klopp , MxV Rail, USA	Opening Comments by Session Chair Kerry Jones , MxV Rail, USA
11:00am	Track Superstructure Design Considerations to Increase Buckling Resistance Brandon Van Dyk , Vossloh Fastening Systems America Corporation, USA	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 Nicolas Demond , Pandrol, France
11:20am	Preventive Maintenance Prioritization for Track Assets at Risk of Buckling Larissa Padilha Lacerda , Rumo Logistica, Brazil	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		Improving Durability of Railway Wheel Using Laser Cladding Makoto Akama , Faculty of Systems Engineering and Department of Systems Engineering, Osaka Sangyo University, Japan	
12:00pm	LUNCH, EXHIBITION NETWORKING & IHHA ePOSTERS Bartolin Hall		
12:20-12:50pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL Bartolin Hall		
	<ol style="list-style-type: none"> 1. Extending the Life and Performance Life Extension of Turnouts, Bridge Decks and Plain Line Timber Ties Stephen Atherton, Rhomberg Sersa North America, USA 2. Rail Flaw 3D Imaging by Enhanced Ultrasonic Synthetic Aperture Focus Technique Dr Francesco Lanza di Scalea, University of California, USA 3. Building Digital Worlds: Computational Design Tools for Emulating Battery-Electric Locomotives Dr André Broekman, Aurecon, South Africa 4. Energy Balance Modelling for Guiding the Transition to Battery-Electric Locomotives Dr Rick Vandoorne, Aurecon, South Africa 5. Enhancing Maintenance Efficiency and Safety in Heavy-Haul Railway Operations through On-Route Measurement of Wheel Out-of-Roundness Walter Weilinger, Hottinger Brüel & Kjaer, Austria 6. Updates on Locomotive Decarbonization Initiatives Pedro Mageste, MRS Logística, Brazil 		

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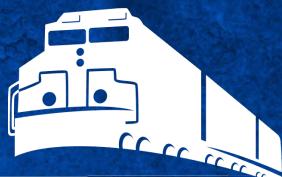
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1:00pm	Opening Comments by Session Chair Andrea Berry, CN, Canada	Opening Comments by Session Chair Jay Monaco, Amsted Rail, USA	Opening Comments by Session Chair Silvia Galvan-Nunez, MxV Rail, USA	Opening Comments by Session Chair Richard Stock, Plasser American Corporation, US	Opening Comments by Session Chair James Petty, Aurizon, Australia
1:05pm	Forward-Facing Camera System Using Artificial Intelligence-Based Image Processing for Train Protection Derel Wust, 4AI Systems, USA Mark Wood, 4AI Systems, Australia	Development and Creation of Tank Car Test Plates for Non-destructive Evaluation Assessments Stephen Mackie, National Research Council (NRC), Canada	Machine Vision Systems for Track Inspection: A Management Perspective Arthur Bilheri, BNSF Railway, USA	A Comprehensive Operation Safety Performance Evaluation Framework for Heavy-Haul Trains Zhichao Zhang, China Academy of Railway Sciences (CARS), China	Investigation of Intelligent Algorithms and Control Strategies for Battery Management System in Heavy Haul Locomotives: Digital Twin Design Approach Prof Maksym Spiriyagin, CQUniversity, Australia
1:25pm	Deep Reinforcement Learning Applied to Flat Yard Shunting Optimization Rael Andretto, MRS Logística, Brazil	Draft Gears: Design, Selection and Maintenance to Maximize Rolling Stock Reliability Ross Hartley, Miner Enterprises, USA	3D Laser and AI Based Approach for Automated Switch and Frog Inspection Richard Fox-Ivey, Railmetrics, Canada	North American Rail Profile Grinding Templates' RCF and Wear Performance Dr Ulrich Spangenberg, MxV Rail, USA	Exploration and Implementation of Railway Catenary System Advanced Intelligent Monitoring Technology Yanhong Yin, China Academy of Railway Science Corporation Limited Locomotive & Car Research Institute, China
1:45pm	Simulation of Wheel-Rail Friction Identification Using Instrumented Revenue Vehicles (IRVs) Kevin David Oldknow, Simon Fraser University, Canada	Developing Additional Safety Functionality for Air Brake Telemeters Wynand Botha, Transnet Freight Rail, South Africa	Correlation Between Degradation of Geometric and Anomalies in Railway Turnouts Jean Carlos Santos, Rumo Logistica, Brazil	Performance Evaluation of AAR-2A Wheel Profile for Freight Cars Nilton de Freitas, Rumo Logistica, Brazil	A Greater Role for Batteries Scott Swenson, Progress Rail, A Caterpillar Company USA Sidarta F. Beltramin, Progress Rail, Brazil
2:05pm			Case Study: Statistics Correlation Between GBFI And Geometry Readings Amanda Conradt, Loram South America, Brazil Leonardo Soares, Loram South America, Brazil	Train Vehicle Number Recognition and Consist Counting Using Deep Learning Nkululeko Gobhozi, Transnet Rail Infrastructure Manager (TRIM), South Africa	
2:25pm	COFFEE BREAK & EXHIBITION NETWORKING Bartolin Hall				

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2:35pm	Opening Comments by Session Chair Heikki Luomala, Tampere University, Finland	Opening Comments by Session Chair Prof Ravi Ravitharan, Monash Institute of Railway Technology, Australia	Opening Comments by Session Chair Alberto Ronchi, Luccini, Italy	Opening Comments by Session Chair Prof Hannes Gräbe, University of Pretoria, South Africa	Opening Comments by Session Chair Dr Alfredo Núñez Vicencio, TU Delft, The Netherlands
2:40pm	The Impact of Rail Grinding on Fuel Efficiency at Rumo Christopher Lidberg, Loram Maintenance of Way, USA Camila Moscibrocki, Rumo Logistica, Brazil	Strengthening Safety in Constant Warning Time Grade Crossing Signaling Applications Guilherme Rodrigues, MRS Logística, Brazil	High Performance Wheel Testing Kerry Jones, MxV Rail, USA	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	Case Studies Using Vehicle-Track Interaction Digital Twins for Maintenance Decisions Ashkan Darbani, Loram Technologies, USA
3:00pm	Validating Heavy Haul Fuel Savings with Advanced Statistical Analysis Marco Santoro, LB Foster Rail Technologies, USA Robert Stevens, First Analytics, USA	Untapped Potential of Mass-collected Rail Profiles Gustavo Dias e Silva, Global Rail North America, Canada	Validation Of Wheel Flat Detection and Characterisation Using Wayside Data Jesper Westerberg, Predege AB, Luleå University of Technology, Sweden	Field Experimentation Quantifying Rail Creep in a Steep-Grade Curve Jose Gustavo Ramos, Rail Transportation and Engineering Center – RailTEC USA	Canadian National Autonomous Track Inspection Program (CN ATIP) Tarek Shalaby, ENSCO Rail USA Andrea Berry, CN, Canada
3:20pm		Concrete Sleeper Life Cycle Management Strategy Leon Wessels, Rio Tinto, Australia	Increase in Wheel Consumption Rate after Rail Grinding Amanda Conradt, Loram South America, Brazil Leonardo Soares, Loram South America, Brazil	SILETIE: Heavy Haul Crossties Mechanical Monitoring, A Study of Case Dr Arindom Saha, Siletio Technology, USA	
3:40pm		The Case for an Industry Wide Machine Vision Marketplace Phil Lentz, UNSPACE, USA	The Effect of Freight Wagon Bogie Type on Track Loads Tiia Loponen, Research Centre Terra, Tampere University, Finland		
4:00pm	BREAK				

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	SUSTAINABLE INNOVATION Broadmoor Hall BH-C	RAIL OPERATIONS Broadmoor Hall BH-D	ROLLING STOCK Broadmoor Hall BH-E	TRACK/SLEEPERS & FASTENERS Broadmoor Hall BH-F	VEHICLE TRACK SYSTEMS Bartolin Hall BE-207	TRACK/WELDING Bartolin Hall BE-210
4:10pm	Opening Comments by Session Chair Christopher Lidberg, Loram Maintenance of Way, USA	Opening Comments by Session Chair Joe Brosseau, MxV Rail, USA	Opening Comments by Session Chair Yi Wang, MxV Rail, USA	Opening Comments by Session Chair Yin Gao, MxV Rail, USA	Opening Comments by Session Chair Anders Ekberg, Chalmers University of Technology, Sweden	Opening Comments by Session Chair Joe Kristan, Rocky Mountain Steel Mills, USA
4:15pm	Action Priority Matrix and Technology Roadmap for Machine-Learning Predictive Maintenance Dr Emma Molobi, Transnet, South Africa	Enhancing Railway Operations Safety Through Innovative Hazard Detection with Distributed Acoustic Sensing Dr Milad Salemi, Sersonic, USA	Welding Flux Optimization Ensuring Integrity and Success of Heavy Haul Wagons Mesham Sivnarain, Transnet Engineering, South Africa	Union Pacific's EPC Tie Journey Michael Gilliam, Union Pacific Railroad, USA	Battling low rail damage in wide-gauge curves on heavy haul lines Marie-Chantale Genest, ArcelorMittal Infrastructure Canada, Canada	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
4:35pm	Climate Resilience and Geohazard Assessment of Heavy Haul Corridors Using Space Technology Skevi Perdikou, Geofem, Cyprus	Dynamic Simulation of Risky Train Movement Exceeding Limits of Authority Dr Daoxing Chen, Transportation Safety Board of Canada, Canada	Defect Prediction of Bearings Using Ultrasonic and Eddy Current Inspections Sergio Martinez, University of Texas Rio Grande Valley, USA	Comparative Evaluation of Under Tie Pads on Railroad Track Maintenance Arthur de Oliveira Lima, RailTEC, University of Illinois at Urbana-Champaign, USA	A Robust Scientific Approach to Optimizing Heavy Haul Turnouts Darrien Welsby, Institute of Railway Technology, Monash University, Australia	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
4:55pm		Cost-Benefit Analysis Traditional and Semi-Mechanized Ballast Track Construction Using Discrete Event Simulation Hossein Taheri, Georgia Southern University, USA	Management of Coupling Forces Via Mathematical Modeling and Machine Learning Camila Moscibrocki, Rumo Logistica, Brazil	Same Static Stiffness Leads to Same Performance? - Not When It Comes to Under Sleeper Pads Raphael Marotta, Getzner Werkstoffe, Austria	Development of Magnetostrictive EMAT Technology for In-Motion Wheel Inspection Dr Anish Poudel, MxV Rail, USA	Causes and Resolution of Low Strength in Flashbutt Welds in Premium Rails John Cookson, Institute of Railway Technology, Monash University, Australia
5:15pm			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	Machine Learning for Predictive Modeling of Crosstie Degradation: Key Factors in Forecasting Remaining Service Life Dr Kenza Soufiane, Loram Maintenance of Way, USA	Digital Transformation in Rail: Business Intelligence Application for Advanced Analytics Wynand Botha, Transnet Freight Rail, South Africa	
5:35pm	CLOSE OF CONFERENCE SESSIONS					
6:30pm-9:30pm Int'l Center	GALA DINNER Sponsored by Plasser & Theurer					
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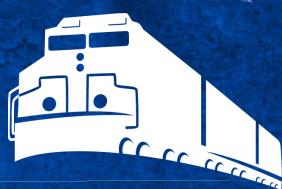
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THURSDAY NOVEMBER 20, 2025

MORNING COFFEE & EXHIBITION NETWORKING Bartolin Hall					
IHHA PARALLEL TECHNICAL SESSIONS					
	TRACK/CWR Broadmoor Hall BH-C	TRACK/BALLAST & SUBGRADE Broadmoor Hall BH-D	ROLLING STOCK Broadmoor Hall BH-E	TRACK/ TURNOUTS Broadmoor Hall BH-F	BRIDGES Bartolin Hall BE-210
8:30am	Opening Comments by Session Chair Dr Francesco Lanza di Scalea, University of California, USA	Opening Comments by Session Chair Christopher Lorren, Norfolk Southern, USA	Opening Comments by Session Chair Dr Ulrich Spangenberg, MxV Rail, USA	Opening Comments by Session Chair Dr Elias Kassa, Monash Institute of Railway Technology	Opening Comments by Session Chair Dr Duane Otter, MxV Rail, USA
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	Concrete Tie Behavior In Different Ballast Support Conditions Adam Bankston, BNSF Railway, USA Dr Stephen Wilk, MxV Rail USA	Hopper Wagon Optimization for Soybean and Corn Transportation in Brazil Danilo Martelli, Rumo Logistica, Brazil	Next Generation of Heavy Haul Turnouts Stacey L. Schmidt, voestalpine Railway System Nortrak, Canada Uwe Ossberger, voestalpin Railway Systems, Austria	Integrated Vibration-Based Bridge Monitoring Approach for Freight Dominated Lines Dr Arjen Zoeteman, ProRail, The Netherlands Dr Chen Shen, Delft University of Technology, The Netherlands
8:55am	Development of Method for Track Buckle Hotspot Identification Using Geometry and Laser Based Data J. Riley Edwards, University of Illinois – Urbana Champaign, USA	Development of a Formulation to Calculate Railway Subgrades Allowable Stress Dalila Carvalho de Almeida Filippetto Pires, Vale, Brazil Raiane da Costa Virgílio, Vale, Brazil	Numerical Assessments of Air-Drags for Current and Modified Designs of Australian Freight Wagons Dr Qing Wu, Centre for Railway Engineering, CQU University, Australia	Railroad Turnout Elasticity Optimization Using Revenue Service Wheel Profiles Jaeik Lee, RailTEC, University of Illinois at Urbana-Champaign, USA	Railway Bridge Failures World Directory, New Indices for Safety Management Éric Auzolles, Ministry of Transport and Sustainable Mobility, Canada
9:15am	Factors Affecting Lateral Resistance and Track Buckling Dr Heikki Luomala, Research Centre Terra, Tampere University, Finland	Non-Destructive Methods to Assess Subgrade and Track Construction Quality Asger Eriksen, Zetica Limited, UK	Safetruck: Detecting Wagon Damping Inefficiencies Using a Laser-Based Detection System Caroline Martins Masso, Rumo Logistica, Brazil	Comparative Analysis of Operational Performances Between Fixed and Movable Frog Turnouts Fábio Fredi Ribeiro de Melo, Companhia do Metropolitano de São Paulo Brazil	Short-Span Steel Railway Bridge Concepts for Heavy-Haul Systems Dr Gary Fry, Fry Technical Services, Inc., USA
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	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				

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	TRACK/CWR Broadmoor Hall BH-D	RAIL, WHEEL & AXLE INSPECTIONS Broadmoor Hall BH-E	TRACK MAINTENANCE Broadmoor Hall BH-F	TRACK/ SUBGRADE Bartolin Hall BE-210
10:05am	Opening Comments by Session Chair Jonathan Leung, KTH Royal Institute of Technology, Sweden	Opening Comments by Session Chair Dr Ananyo Banerjee, MxV Rail, USA	Opening Comments by Session Chair Franco Fanucci, Loram Maintenance of Way, USA	Opening Comments by Session Chair Dr Stephen Wilk, MxV Rail, USA
10:10am	Prevention of Buckling through Autonomous Track Geometry Measurement System Inspections Rafael Pereira Kox, MRS Logística, Brazil	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 Dr Zhen Pan, China Academy of Railway Sciences Corporation (CARS), China	Union Pacific Railroad's Integrated Strategies for Roadbed Maintenance and Geohazard Management Rachel Beck, Union Pacific Railroad, USA
10:30am	Latest advancements in FRA CWR and Track Buckling Research Radim Bruzek, ENSCO, USA	Latest Developments in Surface Inspection Technology for Railway Axles in Production Angelique Raude, Evident Scientific, USA	Automation in Track Maintenance: A Solution to Workforce Shortage Dr Fabian Hansmann, Plasser & Theurer, Austria Hakan Uzuner, Plasser American Corporation, USA	Track Settlement Mitigation of Degraded Ballast through a Rubber-Bitumen Coating Prof Hannes Gräbe, University of Pretoria, South Africa
10:50am	Rail Break and Track Buckling Risk Assessment after Derailment Reconstruction Dr Anders Ekberg, Chalmers University of Technology, Sweden	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 Transport Economics, Graz University of Technology, Austria Markus Loidolt, Institute of Railway Engineering and Transport Economics, Graz University of Technology, Austria	Soil-Binder Mixtures Dr Abdoul Aziz Diene, Vale, USA
11:10am	BREAK			
11:20am-11:50am	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL			
	<ol style="list-style-type: none"> Effects 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 Brennan Gedney, University of South Carolina, USA Lidar – The Ultimate Purpose Tool for Track Inspection Asger Eriksen, Zetica, UK Broken Rail - Risk Management for the Future Roy Leslie, Siemens Mobility, Australia AI-Powered Prescriptive Track Maintenance Decisions from Ore Car Performance Measurement Dr Nithurshan Nadarajah, Institute of Railway Technology, Monash University, Australia Track Stiffness Variation Detection through Onboard Dynamic Response Analysis and Hybrid Signal Processing Technique Reza Naseri, University of South Carolina, USA 			

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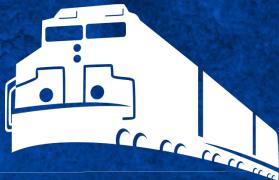
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	TRACK/RAILS Broadmoor Hall BH-C	RAIL OPERATIONS Broadmoor Hall BH-D	TRACK INSPECTION Broadmoor Hall BH-F	TRACK/ CONCRETE SLEEPERS Bartolin Hall BE-210
11:20am	Opening Comments by Session Chair Uwe Ossberger, voestalpine Railway Systems, Austria	Opening Comments by Session Chair Dr Hai Huang, Pennsylvania State University, USA	Opening Comments by Session Chair Dr Fabian Hansmann, Plasser & Theurer, Austria	Opening Comments by Session Chair Adam Bankston, BNSF Railway, USA
11:25am	Computational Analysis of Subsurface Crack Growth in Railway Rails Under Cyclic Loading Sina Saberi, Texas A&M University, USA	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 Matimba Shihambi, Transnet Rail Infrastructure Manager (TRIM), South Africa	Experimental Study on the Lidar The Ultimate Purpose Tool for Track Inspection 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
11:45am	Induction Tempering of WEL Formed by Grinding on TR68 Rail Dr Julio Neves, Universidade Técnologica Federal do Paraná, Brazil	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	Under Sleeper Pads as a Countermeasure to The Low Frequency Vibration in Soft Soil Areas Antti Pelho, Research Centre Terra, Tampere University, Finland
12:05pm	Crack Growth Guidelines for Magic Wear Rate – Swedish Casto Wayside Detector Systems Study Jonathan Leung, Department of Engineering Mechanics, KTH Royal Institute of Technology, Sweden	Positive Train Control Responses to Magic Wear Rate – Swedish Casto 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	Factors Affecting Mechanical Strength Loss of Concrete Ties in Brazil Maria Euarda Guedes Coutinho, Federal University of Uberlândia, Brazil
12:25pm	LUNCH, EXHIBITION NETWORKING & IHHA ePOSTERS Bartolin Hall			
12:20pm-12:50pm	IHHA ePOSTER SESSIONS LOCATED IN THE EXHIBITION HALL Bartolin Hall			
	<ol style="list-style-type: none"> 1. Enhancing Railway Safety and Maintenance Through Advanced Distributed Fiber Optic Acoustic Sensing Paul Richardson, AP Sensing, Germany 2. Tensor Mining of Public Railroad Accident Reports Miguel Gutierrez, University of California Riverside, USA 3. Analysis of tamping Cycles Based on the Conditions of Railways Components Larissa Padilha Lacerda, Rumo Logistica, Brazil 4. A Deep Neural Network for Broken Rail Prediction Using Multi-Source Data Mulin Wan, Tongji University, China 5. Developing Methodology to Estimate WTW Impacts in Heavy Haul Transportation Vinod Bhatia, Ministry of Railways, Government of India 			

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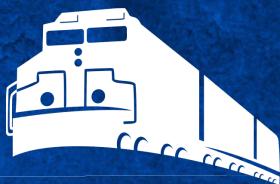
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	TRACK/ RAILS & WELDS Broadmoor Hall BH-C	VEHICLE TRACK SYSTEMS Broadmoor Hall BH-D	ROLLING STOCK/ MODELLING Broadmoor Hall BH-E	TRACK MAINTENANCE Broadmoor Hall BH-F	TRACK/BALLAST & SUBGRADE Bartolin Hall BE-210
1:35pm	Opening Comments by Session Chair Dr Cong Qiu, Monash Institute of Railway Technology, Australia	Opening Comments by Session Chair Sabri Cakdi, Holland LP, USA	Opening Comments by Session Chair Stan Gurule, MxV Rail, USA	Opening Comments by Session Chair Kenza Soufiane, Loram Maintenance of Way, USA	Opening Comments by Session Chair Yao Shan, Tonji University, China
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	Cross-Correlation Based Railway Change Detection: A Novel Approach J. Riley Edwards, University of Illinois - Urbana Champaign, USA Jose Augusto Ramos , Visiostack Inc, USA	Mathematical Modeling and Simulation Techniques for Improved Heavy Haul Freight Operations John Deppen, Amsted Rail, USA	Track Surfacing Cycle for Heavy Haul Lanes with High Degradation Rates Rafael Pereira Kox, MRS Logística, Brazil	Evaluating Particle Breakage in Geogrid Stabilized Ballast Phuriwit Jaikaew, University of South Carolina, USA
2:00pm	Using High Flow Preheater Device for Improvement in Mechanical Properties of Aluminothermic Welds Archit Kavishwar, Pandrol, USA	Low-Cost Angle-Of-Attack Monitoring Using Existing Wind Data Nkululeko Gobhozi, Transnet Rail Infrastructure Manager (TRIM), South Africa	Using AI Model for Constant Monitoring of Life Prediction of a Railcar Structure Matheus Lima Silva, Greenbrier Maxion, Brazil	Avoiding Premature Rail Replacements Rahel Reinhardt, Vossloh Rail Services North America, Canada	Stabilisation Tamping: An Early Intervention to Improve Track Quality Behaviour Florian Gerhold, Institute of Railway Engineering and Transport Economy, Graz University of Technology, Austria
2:20pm	Effects and Degradation of Rails under Dynamic Gauge Widening Charles Rudeen, Loram Maintenance of Way, USA Tiago Tepedino , Loram South America, Brazil	AI-Based Real Time Video Analytics System for Detecting Railway Defects Dr Nithurshan Nadarajah, Institute of Railway Technology, Monash University, Australia	Unsupervised ML Techniques for Detecting Imbalances in Freight Railway Vehicles Cássio Bragança, Polytechnic School of the University of São Paulo, Brazil	Impact of Rail Grinding in India's Dedicated Freight Corridors Sandesh Shrivastava, Dedicated Freight Corridor Corporation of India (DFCCIL), India	Assessing Track Stability Using Ballast Bulk Stress as a New Safety Indicator Dr Hai Huang, Pennsylvania State University, USA Qifeng Yang, Pennsylvania State University, USA
2:40pm	Experimental Assessment of Fracture in Rails Due to Cyclic Loading Özant Özümcü Bulguoglu, Texas A&M University, USA	Evolution of Automated Track Condition Monitoring: A Decade of Innovation and Safety Improvements John Furlong, CPKC, USA Rafael Maldonado, ENSCO, USA		Track Maintenance Strategies for Single-Line Heavy Haul Rail Freight Track: the MRS Experience Josué Cesar Bastos, MRS Logística, Brazil	Significance of Unsaturated Railway Foundation Materials for Increased Axle Loading Dr GD (David) Mpye, University of Pretoria, South Africa
3:00pm	BREAK & EXHIBITION NETWORKING Bartolin Hall				

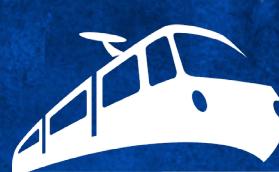
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CLOSING CEREMONY

3:30pm Broadmoor Hall B	<p>Master of Ceremonies Niki Toussaint, Senior AVP, Marketing & Education, MxV Rail, USA</p> <p>Turning Ideas into Impact: How Supplier Leadership is Shaping the Rail Industry's Future</p> <p>Panelists:</p> <p>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 Jon Behrens, Vice President, Engineering, Loram Maintenance of Way, USA Moderator: Jason Reiling, Senior AVP, Business Development, MxV Rail, USA</p> <p>Next IHHA + WCRR Conference Announcements</p> <p>Awards and Closing Remarks</p>
5:00pm	CLOSE OF CONFERENCE SESSIONS

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FRIDAY NOVEMBER 21, 2025 | OFFICIAL TECHNICAL SITE TOUR

MxV Rail PuebloPlex Tour and Track Walk at FAST®	
7:30am	
7:30am	Safety Briefing Shawn Vecellio , Senior AVP Operations & Safety, MxV Rail, USA 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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