

IRSA2025 PROGRAM



5. International Railway Symposium Aachen

19. – 20. November 2025 at Eurogress, Aachen

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ORGANIZER



PARTNER





19.11.2025

BRUSSELS HALL

09.30–09.45	Opening Remarks <i>Prof. Nils Nießen, Institute of Transport Science at RWTH Aachen University</i>
09.45–10.00	Welcoming words <i>Oliver Krischer, Ministry of Environment, Nature and Transport of North Rhine-Westphalia</i>
10.00–10.30	Keynote <i>Prof. Eckhard Roll, Deutsches Zentrum für Schienenverkehrsfor- schung beim Eisenbahn-Bundesamt</i>
10.30–11.00	Coffee Break
11.00–11.30	Keynote <i>Marcel de la Haye, CER Technical Director</i>
11.30–12.00	Keynote <i>Steffen Bobsien, Vice President Locomotives & Passenger Coaches, Siemens Mobility GmbH</i>
12.00–13.30	Lunch Break

ROOM K1

13.30–13.55	Capacity I	Digitalization in railway capacity management: challenges and expectations <i>Emanuel von Heel, quattron GmbH</i>
13.55–14.20	Capacity I	Service-based infrastructure adaptation to optimize planning processes <i>Dr. Alexander Kuckelberg, quattron GmbH</i>
14.20–14.45	Capacity I	Approximation of service systems to determine the performance of railway infrastructure in stations <i>Tamme Emunds, Institute of Transport Science at RWTH Aachen University</i>
14.45–15.10	Capacity I	Capacity and Quality Assessment of Track Groups in Railway Nodes (E) <i>Sirikorn Satittrattanashewin, Technical University Dresden</i>
15.10–15.40		Coffee Break
15.40–16.05	Railway platforms	Framework conditions for the implementation of platform barriers and access controls in the German mainline railway system <i>Florian Horn, DB InfraGO</i>
16.05–16.30	Railway platforms	The height difference between the vehicle platform. Boarding situations in German regional rail transport <i>Sebastian Herwartz-Polster, German Aerospace Center</i>
16.30–16.50		Coffee to go
16.50–17.15	Freight traffic	Modular principle for sustainable rail freight transport in rural and regional areas <i>Prof. Manfred Enning, FH Aachen</i>
17.15–17.40	Freight traffic	DAK: Quantum leap for rail freight transport or technological dead end <i>Dr. Kurt Fuchs, Lawyer Dr. Kurt Fuchs</i>
19.00		Dinner

ROOM K2

13.30–13.55	Condition monitoring	Development of a condition monitoring system for axles with independent wheels <i>Dr. Mirco Janßen, Gutehoffnungshütte Radsatz GmbH</i>
13.55–14.20	Condition monitoring	Efficient EN 50318-compliant simulation model of the interaction between pantographs and overhead catenary line <i>Matthias Zelinka, PJ Monitoring GmbH</i>
14.20–14.45	Condition monitoring	Development of an integrated digital twin based on open data for track maintenance using smart-phone sensor technology <i>Philipp Leibner, Institute for Rail Vehicles at RWTH Aachen University</i>
14.45–15.10	Condition monitoring	Wheel/rail adhesion-based support of automated train operation (ATO) (E) <i>Dr. Marcus Fischer, Knorr-Bremse Systeme für Schienenfahrzeuge GmbH</i> <i>Felix Kröger, DB Systemtechnik GmbH</i>
15.10–15.40		Coffee Break
15.40–16.05	Assisted and automated driving	Pre-development of camera-based on-sight ATO functions – railhead and switch position detection as well as infrastructure-side Support of clearance gauge monitoring for shunted units a scaled model <i>Tobias Hofmeier, Karlsruhe Institute of Technology</i>
16.05–16.30	Assisted and automated driving	Hybrid 5G real-time transmission in the siding railway in the context of SAMIRA2.0 <i>Sam Münchow, IKADO GmbH</i>
16.30–16.50		Coffee to go
16.50–17.15	Wheel-rail interaction	Presentation of a new wheel shape to reduce thermally induced residual tensile stresses and their possible consequences in the rim of block-braked wheels <i>Sören Barteldes, Bochumer Verein Verkehrstechnik</i>
17.15–17.40	Wheel-rail interaction	Contactless measurement of wheel-rail forces on rail vehicles <i>Jakob Moder, Zyglox GmbH</i>

19.00

Dinner

ROOM K3

13.30 – 13.55	Timetable analysis and improvement	Automated Delay Detection in Railway Networks <i>Thomas Graffagnino, Swiss Federal Railways (SFR) (E)</i>
13.55 – 14.20	Timetable analysis and improvement	Estimation of Train Dwell Times based on Data Driven Approach (E) <i>Takuya Kaneko, Tokyo Metro Co Ltd</i>
14.20 – 14.45	Timetable analysis and improvement	Improving Timetables by combined Optimization of Buffer Times and Supplements (E) <i>Burkhard Franke, trafIT solutions gmbh</i>
14.45 – 15.10	Timetable analysis and improvement	Improving operational quality through global optimization of reserve and buffer times (E) <i>Dr. Frédéric Weymann, quattron GmbH</i>
15.10 – 15.40		Coffee Break
15.40 – 16.05	Ride comfort	The sensitivity of simulated ride comfort of the tail coach in a high-speed EMU to unsteady aerodynamic loading and variation in suspension parameters (E) <i>Guozhen Jing, CRRC CHANGCHUN GERMANY RailTech</i>
16.05 – 16.30	Ride comfort	Active secondary vertical suspension using low power actuator and variable damper for railway vehicles (E) <i>Dr. Yoshiki Sugahara, Railway Technical Research Institute</i>
16.30 – 16.50		Coffee to go
16.50 – 17.15	Climate Conditions	Rail resilience to climate change. Impact of extreme weather events on the European rail system (E) <i>Idriss Pagand and Eva Valeri, European Union Agency for Railways (ERA)</i>
17.15 – 17.40	Condition Monitoring	Landing data science and AI in condition monitoring for bogie components and track (E) <i>Dr. Yan Niu, Alstom Transportation Germany GmbH</i>
19.00		Dinner



20.11.2025

ROOM K1

09.00 – 09.25	Vehicle and chassis	Optimization of a self-steering single-axle chassis using a genetic algorithm <i>Stefan Lipinski, Institute for Rail Vehicles at RWTH Aachen University</i>
09.25 – 09.50	Vehicle and chassis	Engineering challenges for the redesign/refurbishment of the Cologne S-Bahn (BR422 and BR423) <i>Martin Kuhlins und Leon Beckmann, DB Systemtechnik GmbH</i>
09.50 – 10.15	Vehicle and chassis	Digital maintenance regulations at Deutsche Bahn, passenger transport <i>Margit Olbrich, DB Systemtechnik GmbH</i>
10.15 – 10.45		Coffee Break
10.45 – 11.10	Safety + Level Crossing	Concepts for off-grid energy supply for alternative level crossing protection <i>Carolin Lang, Karlsruhe Institute of Technology</i>
11.10 – 11.35	Safety + Level Crossing	Security management: risk-oriented assessment of physical and cyber attacks on the rail system <i>Dr. Matthias Jelinski, IVE - Ingenieurgesellschaft für Verkehrs- und Eisenbahnwesen mbH</i>
11.35 – 12.00	Safety + Level Crossing	Development and field experiment of the safety assisting system for passive level crossings (E) <i>Dr. Shota Miyoshi, National Traffic Safety and Environment Laboratory</i>
12.00 – 13.00		Lunch Break

Continued on next page

(E) lecture in english

ROOM K1

13.00–13.25

Technical
presentation

**Optimization of track monitoring
through mobile and vehicle-mounted solutions**
Benedikt Neubauer, Siemens Mobility GmbH

13.25–13.50

Technical
presentation

ETCS on non-federal railways
*Alexander Große, Institute of Transport Science at
RWTH Aachen University*

13.50–14.15

Technical
presentation

**Deutsche Bahn's path to becoming
a data-driven organization**
Dr. Konstantin Jonas, DB AG

14.15–14.25

Closing words
*Prof. Raphael Pfaff, Institute for Rail Vehicles
at RWTH Aachen University*

14.25

End

ROOM K2

09.00–09.25	Infrastructure status I	AI applications for regular monitoring of the railway infrastructure <i>Dr. Kira Zschiesche, Fraunhofer Institute for Physical Measurement Techniques IPM</i>
09.25–09.50	Infrastructure status I	Quantification of the interactions of maintenance and renewal measures on the condition of the rail network <i>Felix Lampe, DB InfraGO AG</i>
09.50–10.15	Infrastructure status I	Determining requirements of DB InfraGO AG – opportunities and challenges of integrating the condition <i>Sebastian Ude, DB InfraGO AG</i>
10.15–10.45		Coffee Break
10.45–11.10	Data and planning	LeiDa-D – Versioned, centralized data storage for basic and infrastructure data <i>Mario Trappein, quattron GmbH</i>
11.10–11.35	Data and planning	Traffic Management System (TMS) in Switzerland – New challenges in safety and reliability <i>Ernst Zollinger, Enotrac AG</i> <i>Gabrio Caimi, SBB</i>
11.35–12.00	Data and planning	Optimization of operational planning processes at DB Long-Distance to implement the requirements of Annex VII <i>Danny Rohrberg und Heiko Güthenke, DB Fernverkehr AG</i>
12.00–13.00		Lunch Break
13.00–13.25	Vehicle technology	Load-dependent influences on rail damage mechanisms – Methodology for wear assessment based on empirical data (E) <i>Dieter Knabl, Technical University Graz</i>
13.25–13.50	Vehicle technology	Proposal of Reliable Onboard Train Localisation Method by Smart Integration of RTK-GNSS, IMU, and Multi One-dimensional LiDAR Sensors (E) <i>Kensuke Nagai, The University of Tokyo</i>
13.50–14.15	Vehicle technology	Small, Lightweight, Driverless Rail Vehicle for Rural Areas in Europe (E) <i>Thomas Müller, German Aerospace Center</i>
14.15–14.25		Closing words
14.25		End

ROOM K3

09.00–09.25	Railway Capacity II	Targeted infrastructure investments for more efficient use of railway capacity by different market segments (E) <i>Harald Buschbacher, SCHIG mbH</i>
09.25–09.50	Railway Capacity II	Evaluating network capacity effects of ETCS L2 in a timetable-based capacity assessment model (E) <i>Cédric Kekes, Technical University Dresden</i>
09.50–10.15	Railway Capacity II	Infrastructure Capacity Evaluation of Modular Freight Train Platoon under ETCS Level 2 Signalling System (E) <i>Dr. Zheng NING, Delft University of Technology</i>
10.15–10.45		Coffee Break
10.45–11.10	Infrastructure condition II	Causal Discovery for Railway Health Condition Monitoring – A Case Study (E) <i>Dr. Thorsten Neumann, German Aerospace Center</i>
11.10–11.35	Infrastructure condition II	Monitoring Data Mapping for Infrastructure-oriented Visualization of Railway Track Condition (E) <i>Laura Tatiana Rodríguez Bayona, University of Stuttgart</i>
11.35–12.00	Infrastructure condition II	Decision support for tamping activities – A predictive maintenance approach (E) <i>Dr. Ute Gläser, Institute for Transportation and Infrastructure Systems (IVI)</i>
12.00–13.00		Lunch Break
13.00–13.25	Railway Operations	A SUMO-Based Study of Urban Rail Operations on Frankfurt's Corridor A (E) <i>Paula von der Heide, TU Braunschweig</i>
13.25–13.50	Railway Operations	Modelling Rail Carrier Assignment and Relocation in Multimodal Pod System (E) <i>Nina D. Versluis, Delft University of Technology</i>
13.50–14.15	Railway Operations	Impact of incorrect and incomplete transport statistical data (E) <i>Wolf-Dietrich Geitz, Railistics GmbH</i>
14.15–14.25		Closing words
14.25		End

IRSA 2025 – SESSION-CHAIRS

19. November 2025

Capacity 1	<i>Dr. Christian Meirich, German Aerospace Center</i>
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Railway Platforms	<i>Prof. Dr. Nils Nießen, RWTH Aachen University</i>
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Freight Traffic	<i>Prof. Dr. Nils Nießen, RWTH Aachen University</i>
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Condition Monitoring	<i>Prof. Dr. Roman Schaal, TH Nürnberg</i>
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Assisted and automated driving	<i>Prof. Dr. Christian Schindler</i>
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Wheel-rail interaction	<i>Prof. Dr. Christian Schindler</i>
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Timetable analysis and improvement	<i>Dr. Gabrio Caimi, SBB</i>
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Ride comfort	<i>Prof. Dr. Raphael Pfaff, RWTH Aachen University</i>
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Clima Conditions	<i>Prof. Dr. Raphael Pfaff, RWTH Aachen University</i>
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Condition Monitoring	<i>Prof. Dr. Raphael Pfaff, RWTH Aachen University</i>
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20. November 2025

Vehicle and chassis	<i>Heiko Mannsbarth, Alstom</i>
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Safety + Level Crossing	<i>Bernd Schmidt, FH Aachen</i>
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Technical presentation	<i>Dr. Christoph Gralla</i>
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Infrastructure status I	<i>Dr. Werner Weigand, DB Netz AG</i>
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Data and planning	<i>Dr. Alexander Kuckelberg, quattron GmbH</i>
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Vehicle technology	<i>Dr. Lars Müller, DB Systemtechnik</i>
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Railway Capacity II	<i>Prof. Dr. Norman Weik, TU Munich</i>
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Infrastructure condition II	<i>Prof. Dr. Björn Dickenbrok, TH Mittelhessen</i>
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Railway Operations	<i>Prof. Dr. Norio Tomii, Nihon University</i>
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