IRSA 2019

For the second time, the Research Center of RWTH Aachen University will host the International Railway Symposium (IRSA 2019) from 26.11 - 28.11.2019. The range of topics of the bilingual event (German/English) covers the entire system of rail infrastructure, vehicle technology and operation.

The symposium will take place at the Eurogress Aachen (Monheimsallee 48). Eurogress Aachen is located between Hotel Quellenhof and Neues Kurhaus at the green oasis of Aachen's city park, surrounded by fountains and old trees.

The welcoming address and keynote speeches will be held in the Brüssel Hall. Conference rooms 1, 2 and 4/5 are available for parallel lecture sessions. The keynote speeches and the sessions in th conference rooms 1 and 2 will be simultaneously translated into English.

The Eurogress Aachen is barrier-free and easily accessible by public transport.

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Tuesday, November 26th, 2019

18:00	Get-Together on the 6th floor of SuperC (Templergraben 57)

Wednesday, November 27th, 2019

09:00	Registration in the foyer on the upper floor of the Eurogress (Monheimsallee 48)
10:00	Welcome adress in the Brüssel Hall
	Univ.-Prof. Dr.-Ing. N. Nießen (for the organizing committee), Univ.-Prof. Dr. rer. nat. Dr. h. c. mult. U. Rüdiger (Rector of RWTH), Dr. Hendrik Schulte (State Secretary in the Ministry of Transport of North Rhine-Westphalia)
10:30	Keynote in the Brüssel Hall
	H. Laumen, Managing director Scheidt & Bachmann GmbH
11:00	Coffee break
11:30	Keynote in the Brüssel Hall
	Prof. Dr.-Ing. A. Müller-Hellmann, Institute for Power Electronics and Electrical Drives
	K. Cuypers, Port of Antwerp
12:30	Lunch in the foyer of the Eurogress (upper floor)

13:30 – 15:10	1st session		
	Conference room 1 Predictive and innovative Maintenance for Infrastructure/ Signalling Systems	**Conference room 2 Capacity I**	**Conference room 4/5 Industrial Session**
13:30 –13:55	Cost-effective, minimally invasive and mobile monitoring of the railway infrastructure condition using smartphone sensors *Lukas Stübinger (Siemens Mobility GmbH)* *(Language: German)*	Holding times - analysis and optimization *Lars Ullrich (VIA Consulting & Development GmbH)* *(Language: German)*	Lifecycle cost tendering *Jens Chlebowski (Siemens Mobility GmbH)* *(Language: English)*
13:55 –14:20	Cause-effect relationship between the use of resources and the quality of the infrastructure achieved using bridges as an example *Tobias Jacke (RWTH Aachen)* *(Language: German)*	The Impact of Luggage on Passenger Boarding and Alighting Rates *Dr. Nigel Harris (The Railway Consultancy Ltd)* *(Language: English)*	Der Dieseltriebzug (DMU) im Wandel, alternative Hybrid-technologien für NE- Bahnen, Regional- und Fernverkehr *(Kiepe Electric GmbH)* *(Language: German)*
14:20 –14:45	Integration of Level Crossing in ETCS *Peter Laumen (RWTH Aachen)* *(Language: English)*	MaaS – Microscopy as a Service *Dr. Alexander Kuckelberg (VIA Consulting & Development GmbH)* *(Language: English)*	
14:45 –15:10	Deriving THR and SIL from National Safety Targets, accounting for scale and exposure *Dr. Ello Weits (Movares)* *(Language: English)*	Microscopy on Demand - The timetable of the future is continuous *Björn Glaus (SMA und Partner AG)* *(Language: German)*	
15:10	Coffee break		

15:40 – 17:20	2nd session		
	Conference room 1 Assisted, Automated and Autonomous Driving	**Conference room 2 Wheel-Rail**	**Conference room 4/5 Capacity II**
15:40 –16:05	New perspectives for railways in production and distribution logistics through process automation *Daniela Wilbring (FH Aachen University of Applied Sciences) (Language: German)*	Compensation of measurement errors in the optical recording of the out-of-roundness of rail vehicle wheels *Nils Jagodzinski (RWTH Aachen) (Language: German)*	Generation of the transport service offer with application to timetable planning considering constraints due to maintenance work *Dr. Raimond Wüst (ZHAW, Zurich University of Applied Sciences) (Language: English)*
16:05 –16:30	Operating concepts for the integration of autonomous small vehicles into railway operations *Albrecht Morast (RWTH Aachen) (Language: German)*	Special applications for a modernized weighing / torsion test rig *Stephan Dehmer (Siemens Mobility GmbH) (Language: German)*	An algorithm to identifying delay propagation routes based on visualization of association rules *Yasufumi Ochiai (Odakyu Electric Railway Co., Ltd.) (Language: English)*
16:30 –16:55	ZuG – a step towards automated train driving *Pavel Klasek (Eisenbahnbundesamt) (Language: German)*	Computational Framework to Evaluate Pressure Distribution on Rail track using Hertzian Approach *Aakash Bansal (Delhi Technological University) (Language: English)*	Integrated reliability and capacity modeling of railway infrastructure Norman Weik (RWTH Aachen) (Language: English)
16:55 –17:20	The Brain Train - Autonomous Driving on the Railway Connects the Science Region *Dr. Christoph Gralla (Scheidt & Bachmann GmbH) (Language: German)*	Modern and safety-oriented interference fit design wheel/shaft *Torben Lehnert (Gutehoffnungshütte Radsatz GmbH) (Language: German)*	Identifying and Reducing Performance Uncertainty in UK Railway Timetables *Dr. John Armstrong (University of Southampton) (Language: English)*
19:00	**Dinner in the old tram depot of Aachen** Talstraße 2, 52068 Aachen		

Thursday, November 28th, 2019

09:00 – 10:40	3rd session		
	Conference room 1 **Predictive and innovative Maintenance for Vehicles**	**Conference room 2** **Train driver advisory Systems**	**Conference room 4/5** **Energy Efficiency and Electrical Drives**
09:00 –09:25	Predictive maintenance for local rail traffic: Effects of track faults on the mechanical loads on tram wheels and a concept for condition-oriented maintenance of track infrastructure *Martin-Christopher Noll (i4M technologies GmbH)* *(Language: German)*	Operational optimisation of railway operations by means of cross-linked driver assistance systems *Dr. Christian Meirich (Deutsches Zentrum für Luft- und Raumfahrt e.V.)* *(Language: German)*	Optimal Energy Management Strategy Based on the Pontryagin's Minimum Principle for a Hybrid Train Powered by Fuel Cells and Batteries *Hujun Peng (RWTH Aachen)* *(Language: English)*
09:25 –09:50	Complex accident repair on aluminium car bodies using the example of the KLIA Express, Malaysia *Oliver Hagemann (DB Systemtechnik GmbH)* *(Language: German)*	Effects of the digitization of railway operations from the driver's point of view *Fabian Stoll (RWTH Aachen)* *(Language: German)*	Carbon emission reduction in regional railway – A feasiblity study for battery and fuel cell vehicles *Florian Müller (Technical University of Munich)* *(Language: English)*
09:50 –10:15	Optimization of in-service UT inspections intervals based on wheelset loads monitoring, SMARTSET *Steven Cervello (Lucchini RS S.p.A.)* *(Language: English)*	Cross-linked Driver Assistance Systems - Current Developments at DB Netz AG *Tibor Weidner (DB Netz AG)* *(Language: German)*	A Train Group Control Method to Mitigate Peak Power Demand based on Numerical Calculations of DC-Electrification Circuit *Prof. Takafumi Koseki (The University of Tokyo)* *(Language: English)*
10:15-10:40	Digitalization enables the symbiosis of maintenance and operations to achieve 100% availability *Johannes Emmelheinz (Siemens Mobility GmbH)* *(Language: German)*	LocAssysTH – Driving assistance systems as a step towards automatic driving Prof. Martin Cichon *(TH Nürnberg)* *(Language: German)*	Simulation and test bench operation of the powertrain of a battery and fuel cell hybrid train *Fabian Meishner (RWTH Aachen)* *(Language: German)*
10:40	Coffee break		

11:15 – 12:30	4th session		

	Conference room 1 **Innovative Suspension**	**Conference room 2** **Capacity III**	**Conference room 4/5** **Noise prevention**
11:15 –11:40	Mechatronics and Condition Monitoring in Rail Vehicle Running Gears *Dr. Dietmar Kraft (Bombardier Transportation)* *(Language: English)*	Benchmark of quality standards for capacity determinations *Matthias Bär (TU Dresden)* *(Language: German)*	Numerical investigation of an innovative bogie frame made of glassfibre composite for narrow gauge railways *Paul Schönhuber (RWTH Aachen)* *(Language: German)*
11:40 –12:05	Smart Bogie 4.0 – Chassis diagnosis in the age of the Internet of Things (IoT) and Artificial Intelligence (AI) *Dr. Thomas Moshammer (Siemens Mobility GmbH)* *(Language: German)*	Germany-wide capacity statements by means of automation of railway operations studies *Dr. Frédéric Weymann (VIA Consulting & Development GmbH)* *(Language: German)*	Rail Noise Simulation Laboratory *Christoph Ende (Fraunhofer Heinrich Hertz Institute)* *(Language: English)*
12:05 Uhr –12:30	Determination procedure for strength requirements for bogie frames DIN EN 13749 must be revised *Lucas Eberle (Stadler Altenrhein AG)* *(Language: German)*	A new offer concept for increasing capacity with smartrail 4.0 *Thomas Graffagnino (SBB AG)* *(Language: English)*	Lucchini RS solutions for quieter freight cars wheels *Irene Marazzi (Lucchini RS S.p.A.)* *(Language: English)*
12:30	Lunch in the foyer of the Eurogress (upper floor)		

13:30 – 14:45	5th session		
	Conference room 1 Innovative Braking Systems	**Conference room 2 Assisted, Automated and Autonomous Driving in Freight Trains**	**Conference room 4/5 Industrial Session**
13:30 –13:55	Hydro-Mechanical Closed Loop Brake Torque Control for Railway Disc Brakes *Amos Merkel (RWTH Aachen) (Language: English)*	Methods for monitoring the clearance gauge of goods wagons in an automated shunting system *Dr. Frank Kleespies (DB Systel GmbH) (Language: German)*	Entwicklung und Evaluierung des integrierten Bediensystems (iBS) für die Deutsche Bahn *Nis Börge Wechselberg (Scheidt & Bachmann GmbH) (Language: German)*
13:55 –14:20	Friction Estimation for Railway Brake Systems in Field Tests *Christoph Schwarz (Deutsches Zentrum für Luft- und Raumfahrt e.V.) (Language: English)*	Improved dynamics of vehicle movement in intelligent freight trains *Prof. Bernd Schmidt (FH Aachen University of Applied Sciences) (Language: English)*	Quick-Check: Prognose aus Ist-Daten *Simon Schotten (VIA Consulting & Development GmbH) (Language: German)*
14:20 –14:45	Adaptive compressed air supply for optimal efficiency *Martin Schmid (Knorr-Bremse Systeme für Schienenfahrzeuge GmbH) (Language: German)*	Automatic disconnection of the screw coupling is possible! *Prof. Martin Egger (FHOOE / TU Wien) (Language: German)*	5G in rail *Sascha Engelhardt (umlaut) (Language: German)*

14:45	Coffee break
15:15	Wrap-up session in conference room 1 (Univ. Prof. Dr.-Ing. C. Schindler (for the Organizing Committee)
15:30	End of the event

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