

Tuesday 12 June

Registration / 07:30 – 10:30 / Café Bulten on Hörsalsvägen 7
Coffee from 09:30

Introductory course / 08:00 – 10:00 / HA2 on Hörsalsvägen 4

Chair: Johan Ahlström
Technical support: Jannik Theyssen

Anders Ekberg

Wear and cracks in wheels and rails (30 minutes)

Johan Ahlström

Wheel and rail materials (30 minutes)

Björn Pålsson

Dynamics in switches & crossings (30 minutes)

Wolfgang Kropp

Railway noise generation and emission (30 minutes)

1. Plenary session 1 / 10:30 – 12:45 / HB2 on Hörsalsvägen 8

Chair: Jens Nielsen

Technical support: Casey Jessop

Jens Nielsen

Welcome

Stefan Bengtsson, President and CEO of Chalmers

(15 minutes)

Lena Erixon, Director-general of Trafikverket

(15 minutes)

The Professor Roger Lundén session

Björn Paulsson

Chalmers, Sweden

Keynote lecture: Prevention and mitigation of derailments – A new International Railway Solution (30 minutes)

Richard Stock

LINMAG, Canada

Keynote lecture: Maintenance strategies for advanced rail damage mitigation (30 minutes)

Roger Lundén

Chalmers, Sweden

Keynote lecture: Railway wheels and tread brakes (30 minutes)

Lunch / 12:45 – 14:00 / Café Bulten on Hörsalsvägen 7

2. Parallel sessions 1 / 14:00 – 15:00 / 20 minutes per presentation			
2.1 Rail damage 1 HB2 Chair: Johan Ahlström Technical support: Knut Andreas Meyer	2.2 Track geometry degradation HA2 Chair: Björn Pålsson Technical support: Michele Maglio	2.3 Track construction and upgrade – HA3 Chair: Jan Lundberg Technical support: Emil Aggestam	2.4 Pantograph-catenary dynamics – HA4 Chair: Sebastian Stichel Technical support: Mandeep Singh Walia
Meyer, Ahlström, Ekh Chalmers, Sweden <i>Investigation of material properties of the surface layer of rails</i>	Berggren EBER Dynamics, Sweden <i>A new measurement method to determine structural parameters of a railway track</i>	Ninni, Than Alstom, France <i>Appitrack NG: The use of robotics for construction of slab tracks</i>	Derosa, Nåvik, Collina, Rønnquist NTNU, Norway <i>Wave propagation analysis in railway catenary systems</i>
Hochfellner, Prettnner, Albert, Jussel, Joch, Pietsch voestalpine Schienen, Austria <i>The influence of high strength rails on running behaviour and wheel wear</i>	Nielsen, Berggren Chalmers, Sweden <i>Track geometry degradation on Malmaban – correlation between support stiffness gradient and differential settlement</i>	Paulsson, Ekberg, Elfgren Chalmers, Sweden <i>Efficient upgrading of freight railways</i>	Liu, Stichel, Rønnquist KTH, Sweden <i>How to effectively use lumped-mass on the catenary for better dynamic performance</i>
Esmaeili, Ekh, Vernersson, Ahlström Chalmers, Sweden <i>Modelling of thermomechanically loaded rail and wheel pearlitic steels</i>	Lessner Abetong, Sweden <i>Measurement of contact pressure between sleeper and ballast</i>	Andrieu, Than Alstom, France <i>LCC for New Ballastless Track (NBT) vs ballasted track experiences from France</i>	Nåvik, Derosa, Rønnquist NTNU, Norway <i>Are we ready for high-speed catenaries?</i>

Coffee / 15:00 – 15:30 / Café Bulten

3. Parallel sessions 2 / 15:30 – 16:30 / 20 minutes per presentation			
3.1 High-speed HB2 Chair: Mats Berg Technical support: Jannik Theyssen	3.2 Wheelset damage HA2 Chair: Anders Ekberg Technical support: Rostyslav Skrypnyk	3.3 Traffic management 1 HA3 Chair: Ingemar Frej Technical support: Ali Esmaeili	3.4 Track maintenance and welding – HA4 Chair: Elena Kabo Technical support: Knut Andreas Meyer
Aggestam, Nielsen Chalmers, Sweden <i>Optimisation of transition zones between different railway track forms using a genetic algorithm</i>	Rosengren SKF, Sweden <i>Extending maintenance intervals with confidence – How digitalization and innovation in bearing technology supports sustainable railway industry growth</i>	Flerlage, von Mach Bombardier, Germany <i>Implementation of traction batteries into mainline railway vehicles for emission-free rail travel</i>	Josefson, Bisschop, Maglio, Brouzoulis, Andersson Chalmers, Sweden <i>WRIST – Innovative welding processes for new rail infrastructure</i>
Li Trafikverket, Sweden <i>FE-simulation of track stiffness along transition zones for high-speed slab track</i>	Nordmark, Lundberg, Stenström, Pallari, Domay, Heinimann LTU, Sweden <i>Rolling contact fatigue on heavy haul locomotive wheels. A case study on LKAB IORE locomotives at Malmaban</i>	Liu, Berg, Bustad KTH, Sweden <i>Reduced energy usage at train operation (Shift2Rail)</i>	Maglio, Kabo Chalmers, Sweden <i>Thermo-mechanical analyses of discrete defect repair process for rails</i>
Andersson, Arvidsson Trafikverket, Sweden <i>Train-track-bridge interaction for non-ballasted railway bridges on high-speed lines</i>	Singh Walia Chalmers, Sweden <i>Wear of tread braked wheels and brake blocks</i>	Bøe, Handstanger, Kassa NTNU, Norway <i>Single-lead junctions for merging from rail yards onto double tracks – A capacity analysis</i>	Wong, Kaewunruen University of Birmingham, UK <i>Risk-based maintenance for rail fasteners</i>

Dinner / 17:30 – 23:00
Bus transportation from Chalmers and Hotel Panorama – 17:30
Dinner at Älvsborgs Fästning
Return to Stenpiren
Bus transportation back to Hotel Panorama – 23:00

Wednesday 13 June

4. Plenary session 2 / 09:00 – 10:00 / HB2

Chair: Anders Ekberg

Technical support: Robin Andersson

Martin Schilke

Trafikverket, Sweden

Keynote lecture: New high-speed tracks in Sweden – Technical specifications for track construction (30 minutes)

Peter Veit

Graz University of Technology, Austria

Keynote lecture: The economic service life of track (30 minutes)

Coffee / 10:00 – 10:30 / Café Bulten

5. Parallel sessions 3 / 10:30 – 12:10 / 20 minutes per presentation			
5.1 Rail damage 2 HB2 Chair: Magnus Ekh Technical support: Dimitrios Nikas	5.2 Safety HA2 Chair: Björn Paulsson Technical support: Rostyslav Skrypnik	5.3 Track stiffness and settlement – HA3 Chair: Eric Berggren Technical support: Emil Aggestam	5.4 Condition monitoring 1 HA4 Chair: Elias Kassa Technical support: Mandeep Singh Walia
Jessop, Ahlström, Hammar, Faester, Danielsen Chalmers, Sweden <i>3d characterization of RCF crack networks</i>	Krishna, Berg, Stichel KTH, Sweden <i>Derailment risks in operation of long freight trains</i>	Gåsemyr Bane NOR, Norway <i>Aspects regarding track dynamics applying ballast mats on the permanent way on lines for higher speeds in Norway</i>	Qazizadeh, Berg KTH and TÜV SÜD Sweden, Sweden <i>Suspension fault detection through condition monitoring</i>
Sichani TÜV SÜD Sweden <i>Differential wear modelling - effect of weld-induced imperfections on rail surface quality</i>	Nilsen, Bergmann-Paulsen, Höglund Åberg Lloyd's Register, Norway <i>Safety critical functions – A generic approach to risk assessment in design of rolling stock</i>	Luomala Tampere University, Finland <i>Track stiffness measurements in Finland and utilization of the measurement results</i>	Osman, Kaewunruen University of Birmingham, UK <i>Creating value added for railway track inspection</i>
Skrypnik, Ekh, Nielsen, Pålsson Chalmers, Sweden <i>Simulation of plasticity and wear in railway crossings</i>	Myklebust, Stålhane SINTEF, Norway <i>The Agile Safety Case and DevOps for railway signalling systems</i>	Asadzadeh, Galeazzi, Hovad, Andersen, Thyregod, Rodrigues Technical University of Denmark <i>On the uncertainty of ballast degradation models based on track recording car data in turnouts</i>	Hannes, Dahlberg, Östrand Kiwa Inspecta Technology, Sweden <i>Condition assessment and prediction for asset management of rail tracks</i>
Löhren, Beck Bane NOR, Norway <i>Effects of friction management on rail corrugation</i>	Lawrence, Kaewunruen University of Birmingham, UK <i>Design of blast reduction barrier at railway station platforms</i>	Varis Tampere University, Finland <i>New more elastic turnouts in Finland</i>	Rønnquist, Svendsen, Frøseth NTNU, Norway <i>Hell Bridge Test Arena – Steel bridge exploring sensor supported inspections; Challenges and opportunities</i>
Khan, Nordmark, Lundberg, Stenström LTU, Sweden	Kour, Karim, Aljumaili, Tretten LTU, Sweden <i>Cybersecurity in railway: Risks and impacts</i>	Koller koocoo technology, Austria <i>FFU synthetic sleeper technology – Railway sleeper</i>	Kabo, Ekberg Chalmers, Sweden <i>Monitoring of track and running gear</i>

Operation and maintenance issues of top of rail friction modifier systems at a heavy haul line			
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Lunch / 12:10 – 13:30 / Café Bulten

6. Parallel sessions 4 / 13:30 – 14:50 / 20 minutes per presentation			
6.1 Noise HB2 Chair: Anders Rønnquist Technical support: Ali Esmaeili	6.2 Vehicle dynamics and wheel-rail friction – HA2 Chair: Roger Lundén Technical support: Michele Maglio	6.3 Traffic management 2 HA3 Chair: Uday Kumar Technical support: Casey Jessop	6.4 Condition monitoring 2 HA4 Chair: Thomas Nordmark Technical support: Dimitrios Nikas
Theyssen, Kropp, Pieringer Chalmers, Sweden <i>An efficient simulation model for the dynamic behaviour of slab tracks at high frequencies</i>	Lundberg LTU, Sweden <i>FricWear 2017 Railway Tribometer</i>	Marschnig Graz University, Austria <i>Wear-based track access charging - An engineering approach</i>	Kassa, Sramota, Cia, Skavhaugen NTNU, Norway <i>Monitoring the conditions of switches and crossings/tracks</i>
Torstensson, Nielsen VTI, Sweden <i>Impact noise generated at railway crossings</i>	Khan, Lundberg LTU, Sweden <i>Improved tribology measurements for wheel-rail interface</i>	Illankoon, Tretten, Kumar LTU, Sweden <i>Sustaining implicit learning in locomotive operation</i>	Barkhordari, Galeazzi Technical University of Denmark <i>Identification of low-complexity behavioural model for condition monitoring of railway turnouts</i>
Frid, Källman, Collet ÅF Industry, Sweden <i>A comprehensive survey on the frequency content of curve squeal noise from trams in Gothenburg</i>	Loponen Tampere University, Finland <i>Verification of railway multibody simulation models</i>	Yan, Bouaziz, Kassab, Berbineau, Soler Technical University of Denmark <i>Co-simulation platform for train-to-ground communications</i>	Pålsson Chalmers, Sweden <i>Condition monitoring of crossing panels using embedded sensors</i>
Källman, Alm, Cvetkovski ÅF Infrastructure, Sweden <i>Noise reduction on tram network with vehicle mounted Top of Rail system</i>	Jönsson Analytical Dynamics, Sweden <i>Vehicle vibrations at the Holmestrandsporten tunnel</i>	Frej, Bogg, Öhrström ÅF Infrastructure, Sweden <i>Improving the quality of railway traffic management systems in Sweden</i>	Chandran, Rantatalo, Lind, Odelius LTU, Sweden <i>Train based differential Eddy current sensor system for rail fastener detection</i>

7. Plenary session 3 / 15:00 – 15:30 / HB2

Chair: Jens Nielsen

Technical support: Robin Andersson

Jan Hansson

Trafikverket, Sweden

Västlänken (20 minutes)

Anders Ekberg, Roger Lundén and Jens Nielsen

Closing of the seminar