



Detailed programme

June 17, 2024						
15:00-18:00	Registration				D-Ljugård	
June 18, 2024						
9:00	Registration and Fika				D-Ljugård	
10:00	Opening remarks <i>Sebastian Stichel</i> , Director of KTH Railway Group <i>Annika Borgenstam</i> , KTH's Vice President for Research and <i>Roberto Maiorana</i> , the Director-General of Trafikverket (Online video conference)				D1	
10:30	Plenary session 1 Chair: Sebastian Stichel Plenary presentation 1: Vision 2050 for the Swedish Railways <i>Gustaf Engstrand</i> , Tåg företagen and <i>Linda Thulin</i> , Trafikverket				D1	
11:00	Plenary presentation 2: Greening Technologies, <i>Peter Mellberg</i> , Alstom				D1	
11:30	Lunch				Syster O Bror	
Room	D1	D32	D34	D35	D37	
Session 1	1.1 Infrastructure 1 (Track maintenance)	1.2 Wheel/Rail Interaction 1	1.3 Laboratory Development & Education	1.4 Railway Energy	1.5 Maintenance 1	
Chair	Matthias Asplund	David Fletcher	Uday Kumar	Mats Berg	Pär Söderström	
12:50	12: Global level assessments of track geometry quality along the Western Main Line in Sweden M. Li, E. Aggestam, I. Persson, P. Söderström	42: Top-of-rail lubricants for the wheel-rail contact R. Boukhris, E. Bergseth, U. Olofsson	123: Making better use of railway research M. Schilke	19: Grid-friendly high-power charging system for battery-electric rail vehicles J. Strohacker, S. Röhlig, C. Söffker, L. Lindenmüller	103: Improved rules and regulations of damaged wheels J. Nielsen, K. Mattsson, A. Ekberg, E. Kabo, T. Vernersson, M. Asplund, L. Fehrlund, P. Söderström	

13:10	125: Assessing Finnish track health through in-service train-based track condition monitoring A. Laiho, P. Salmenperä, M. Lehtosaari, S. Kalevirta, M. Kivistö, B. Culkin	54: A more data driven approach to friction management, using a new railhead tribometer B. White, M. Watson, R. Lewis	120: CHARMEC's novel brake roller test rig T. Vernersson, E. V. Landström, R. Lundén	59: Using sensor data to assist decision-making for energy saving and capacity increasing W. Z. Liu, S. Kapoor, M. Berg, E. Dunkars, J. Forsberg	94: Wheel Flat Detection and Length Estimation using Data from Multiple Wheel Impact Load Detectors H. Lindström, A. L.Håkansson, J. Westerberg, W. Birk
13:30	91: Estimating residual risks for railbreaks A. Ekberg, E. Kabo	115: A Machine Learning Approach for Rail Friction Estimation R. Lewis, M. Folorunso, M. Watson, P. Gray	3: The KTH Roller Rig A. Qazizadeh	100: Research on Multi-model Train Energy Consumption Evaluation Method W. Guo	98: Condition Monitoring of Railway Catenary System S. Chen, G. T. Frøseth, A. Lau, A. Rønquist
13:50	89: Predicting Climatic Failures in Railway Infrastructure utilizing Machine Learning K. Chamkhorami, A.H.S Garmabaki, A. Karbalaie, A. Kasraei, S. Famurewa	63: Field Testing of Laser Clad Rails K. Tomlinson, R. Lewis, R. Kempka, K. Yildirimli, D. Fletcher	106: Systems engineering applied in rail infrastructure – a systematic literature search E. Bergseth	75: Survey on problem formulation for railway energy optimisation including OESS K. André, C. Casanueva, S. H-Nia	23: A parallel high-capacity and fast calculation method for assessing track quality index in infrastructure maintenance J. Guo, Z. Liu, J. Liu, K. Tao, J. Yang
14:10	104: A framework for climate adaptation of railway infrastructure V. Jägare, A. H. S. Garmabaki, U. Juntti	11: Optimisation of crossing panel design for reduced environmental footprint H. Vilhelmson, B. A. Pålsson, J. C. O. Nielsen	20: Understanding wheel damage during railway shoe-braking: insights from innovative small-scale testing L. Ghidini, A. Mazzù, M. Faccoli	116: Energy efficient operations of Railway Switch heaters S. Kapoor, W. Z. Liu, K. Canow	110: A method for identifying and locating rail corrugation based on multi-source detection data feature fusion J. Yang, J. Liu, J. Guo, K. Tao
14:30	Fika				D-Ljugård
Room	D1	D32	D34	D35	D37
Session 2	2.1 Infrastructure 2	2.2 Wheel/Rail Interaction 2	2.3 Vehicle Dynamics and Stability 1	2.4 Noise	2.5 Data Analytics and Automation
Chair	Lars-Ove Jönsson	Jens Nielsen	Rickard Persson	Ramin Karim	Amir Garmabaki
15:00	64: Deterioration Factors for Feasible Rail Track Solutions A. Prokopov, S. M. Famurewa, M. Rantatalo	118: Recent development of the multibody dynamics on the efficient modelling of train-track interaction X. Yu, J. Escalona, Z. Li	43: Multidisciplinary Coupling Approach for Dynamic Response Analysis of Maglev Trains using Panel Aerodynamics H. Schmidt, X. Ding, G. Chen	88: Predicting the sound radiation from track vibrations for auralisation J. Theyssen, J. C. O.Nielsen, A. Pieringer	79: Game-based Cybersecurity: An Approach Towards Resilient Railway R. Kour, R. Karim, J. Kumari

15:20	68: Determination of the moment of inertia for different types of superstructures for track stability considerations T. Wastlhuber, S. Freudenstein, W. Stahl	60: The effect of freight wagon bogie on track loads – verification process of freight wagon models T-R. Loponen, R. Varis, H. Luomala	101: Multi-Body Dynamic Fault Simulation in Primary Suspension Systems and Convolutional Neural Network based Diagnosis R. Kumar, M. Pandey, N. S. Vyas	107: Railway curve squeal field measurements and tonal analysis L. Toratti, M. Asplund, M. Rantatalo	92: Leveraging ISO Standard 81346 for Enhanced Railway Asset Management: A Cross-Organizational Approach for Big Data Analytics S. T. Kandukuri, R. Schlanbusch, N. P. Gallishaw, G. T. Frøseth
15:40	131: Whole System Modelling of Switches & Crossings B. A. Pålsson, U. Ossberger	72: Rail side wear of switch tip area and its effect on derailment risk R. Varis, T-R. Loponen, H. Luomala	46: Improved control system of active wheelset steering in turnouts with preview P. Damsongsaeng, R. Persson, C. Casanueva, S. Stichel	67: Inclusion of rail and wheel roughness in noise mapping calculations with Nord2000 M. Ögren, A. Genell, A. Gustafson	52: Virtual Ground Truth - Towards Reliable Obstacle Detection S. Schäfer, M. Cichon
16:00	Leg stretcher				
16:10	102: Effect of FFU and UPS sleepers on low frequency vibration in soft soil areas A. Pelho, H. Luomala, B. Oksanen, T. Huhtala	93: Optimising wheel profile of a high-speed passenger train using improved non-sorting multi-objective genetic algorithm E. Khoramzad, C. Casanueva, S. H-Nia	32: Running Dynamics of the Self-Steering Single-Axle Running Gear M. Rakowitsch, C. Schreiebing, C. Schindler	40: Dynamic analysis of Swedish steel-post wood-panel noise barrier under aerodynamic load from high-speed train D. Liu, C. Wang, J. G-Libreros, A. Andersson, Y. Tu, L. Elfgrén, G. Sas	53: A new testing method based on Model-Based Testing for the Railway Onboard Control System Y. Liao, L. Chen, K. Venkateswaran, C. Roberts
16:30	58: Risk of derailment due to entrapped foreign objects in railway switches S. K.K. Bysani, B. Pålsson, E. Kabo, A. Ekberg	81: Low Rail RCF Causes for Heavy Haul Operation O. P. Yadav, J. Leung, S. H-Nia, M. Berg, M. Asplund	77: Stability of Six-Axle Railroad Cars on Dedicated Freight Corridor of Indian Railway S. K. Karn, A. Gautam, N. S. Vyas	111: A ground-borne noise prediction model for railway traffic in tunnels in bedrock F. Dashti, P. Höstmad, J. Forssén	80: Remote monitoring of the Iron Ore Line with InSAR F. Carlvik, P. T. Torstensson, C.W. Palmqvist
16:50	Gensys User Group Meeting, Ingemar Persson				D37
16:50	Demonstration of the KTH Roller Rig (Max 60 people)				Teknikringen 8
19:00	Boat cruise and dinner				Strandvägen kajplats 15

June 19, 2024

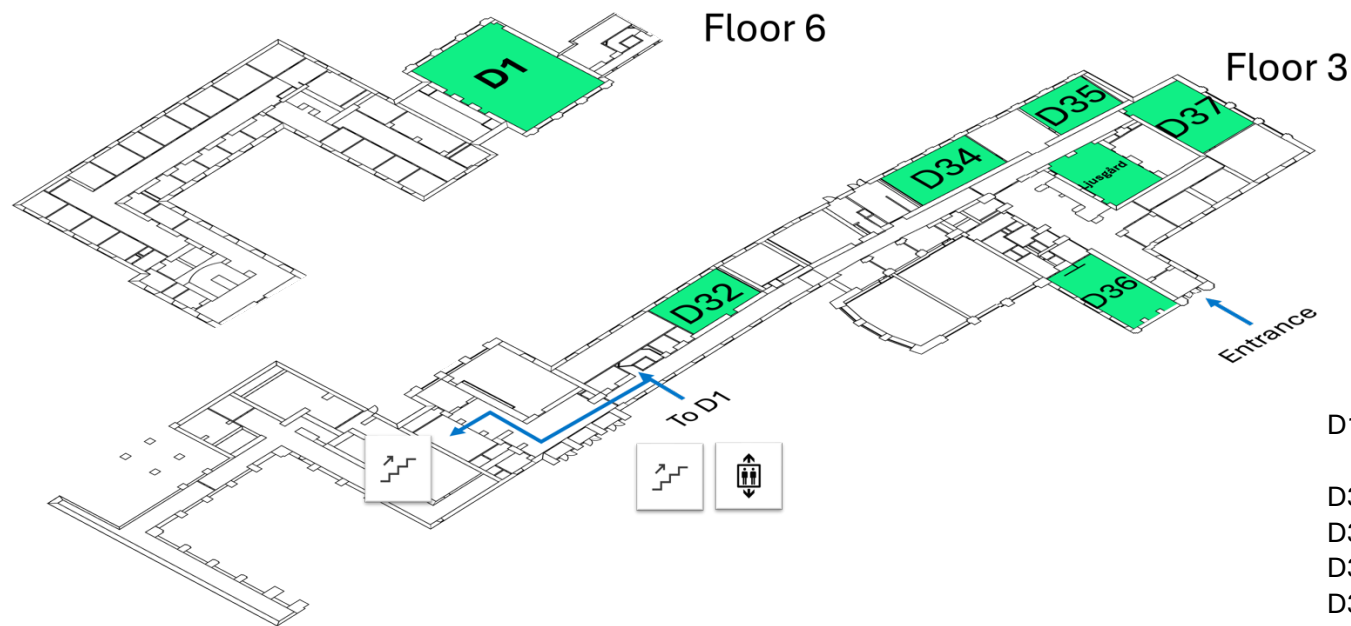
9:00	Plenary Session 2 Chair: Oskar Fröidh Plenary presentation 3: Green field project for a fully integrated and environmentally friendly metro for the future <i>Stockholm, Jonas Westberg</i> Plenary presentation 4: A new logistic system for intermodal transports, <i>Bo-Lennart Nelldal</i>	D1
9:30		
10:00	Fika	D-Ljugård

Room	D1	D32	D34	D35	D37
Session 3	3.1 Infrastructure 3 (Bridges)	3.2 Traction and Braking	3.3 Maintenance 2	3.4 Emerging Technologies 1	3.5 Operations and Traffic Planning 1
Chair	Anders Rønnquist	Ellen Bergseth	Anders Ekberg	Alireza Qazizadeh	Bo-Lennart Nelldal
10:30	29: Damage Detection for Aging Railway Bridges: A Monitoring and Machine Learning Approach I. Bayane, J. Leander, R. Karoumi	1: Friction, wear and particle emissions from Copper-based train brakes Y. Lyu, L. Tanzeglock, Q. Zhang, F. Varriale, J. Mo, J. Pagels, J. Wahlström	18: Optimising wheel and rail economy by non-uniform rail grinding I. Persson, L-O. Jönsson, M. Asplund	5: Development Process of a Sensor System for Obstacle Detection on Railways using Virtual Reality F. Hampel, S. Klamt, Y. Otten, I. Scholl, C. Schindler	117: Challenges related to data collection and availability for railway management P. Mandhaniya, N. O.E. Olsson
10:50	49: Development of a measuring method for determining the displacement and load distribution behaviour of expansion joints on bridges K. Uzar, J. Liu, X. Su	130: Long-term performance of railway brake discs for high-speed postal wagons: wear and fatigue M. S. Walia, A. Lundin, L. Ferhlund	127: Simulation-Based Assessment of Railhead Repair Welding Process Parameters B. Andersson, E. Steyn, M. Ekh, B.L. Josefson	37: Real-Time Semantic Railway Point Cloud Acquisition via Deep Learning: A Camera-Based Approach H. Yan, A. Lau	7: Train Dispatcher in the Cloud: An efficient option for train operations B. Milius, H. Herholz
11:10	86: Investigating railway bridge dynamic factors through measurements J. Stenberg, A. Andersson, R. Lundén	16: Thermomechanics of the brake – wheel – rail system: Results from two tread brake roller rigs E. V. Landström, T. Vernersson, R. Lundén	27: RCF crack propagation predictions M. S. Nezhad, F. Larsson, E. Kabo, A. Ekberg	87: Metaverse for Maintenance in the Railway Industry P. Khanna, L. Nordin , R. Kour, R. Karim	21: Learning from reliability and maintainability for predicting generation and propagation of trains' delays G. Malavasi, S. Ricci, L. Rizzetto
11:30	31: Quantifying error in finite-element models of Lundamo railway bridge N. P. Gallishaw, G. T. Frøseth, R. Schlanbusch	62: Braking performance of freight trains F. Mazzeo, B. Schick, M. Berg, S. Melzi	69: Project for rail head conditioning with AI F. Saur	33: Automation of Industrial Sidings by Using Road-Rail Vehicles as Automated Guided Vehicles A. Stillfried, C. Schindler	50: Predicting train delay based on Random Forest H. Yu, C. Roberts, J. Easton
11:50	48: Simplified dynamic soil-structure interaction of a three-span and a single-span high-speed railway bridge with integrated retaining walls S. A.H. Tehrani	109: Modelling the temperature development of a railway brake disc Y. Zhang, W. Z. Liu, S. Stichel	57: Advancements in Railway Ballast Inspection Methodologies and Technologies: A Comprehensive Literature Review L. J. Husøy, A. Lau	99: FutuRe Innovative solutions for Regional rail services R. Persson, P. Wikaranadhi, M. Lundgren	82: Benefits and drawbacks of integrating Maglev-derived systems in the design phase of new railway lines W. Z. Liu, C. Casanueva, M. M. Zefreh, M. Gabrielsson, P. Farnlof
12:10	Lunch				Syster O Bror

Room	D1	D32	D34	D35	D37
Session 4	4.1 Infrastructure 4	4.2 Vehicle Dynamics and Stability 2	4.3 Signalling and Communication 1	4.4 Sustainability and Emissions	4.5 Rolling Stock
Chair	Martin Schilke	Mikael Wrang	Henrik Sylvan	William Liu	Roger Lundén
13:30	15: The dissertation about railway track drainage – What was learnt? J. Latvala, H. Luomala, P. Kolisoja	4: Research on the impact of improved coupler structure on the dynamic performance of 20,000-ton heavy-haul train X. Meng, L. Li, F. Kang, B. Xu, K. Wang	8: Analyzing challenges and strategies in integrating ETCS with existing signalling systems in rail transport S. Gupta	30: Cost modelling-based railway decarbonization schemes applicability analysis K. Jiang, Z. Tian, S. Hillmansen	76: Load collective design for fatigue analysis of railway vehicle components J. Leung, H. Hu
13:50	51: Ballasted Track Simulator – a new tool for simulating dynamic loading behaviour of railway structures M. Peltomäki, H. Luomala, P. Kolisoja	44: Longitudinal Dynamics of Heavy-Haul Trains: Impact of Tractiob Rod Arrangements on Cyclic Braking Conditions Y. Fan, J. Jiang, X. Peng, Y. Cai, B. Zhang, X. Yuan, G. Liu	73: SDN-Based Telecommunication Infrastructure and Security for Railway Emergency Messages R. Singh, L. Mendiboure, M. S. Berger, L. Dittmann	61: A study on the metro train type influence on the particulate emissions and pollution cost on an underground platform M. Tu, U. Olofsson	13: An abnormal vibration phenomenon and the control strategies of vehicle-mounted motor cooling system in a high-speed train X. Ding, H. Schmidt, G. Chen
14:10	34: 3D DEM-based ballasted track and rail vehicle interaction: model construction verification and analysis C. Shi, C. Zhao, A. Andersson, L. Xu	119: Influence of Coupler System Degradation on Longitudinal Dynamics and Running Safety of Rakes A. Anand, N. S. Vyas	2: Track circuit model validated against test-track data to explore impact of rail contamination on train detection D. I Fletcher, W. Skipper, R. Lewis	38: Evaluation of low-cost air quality sensors at underground train platforms D.B. Manem, U. Olofsson	22: Life extension of a cracked tram carbody L-O. Jönsson, M. Dahlberg
14:30	70: Economies of scale and scope in LCC for Switches & Crossings K. Odolinski, P. Torstensson, B. Pålsson	105: Dynamic interaction between pantograph and catenary – possible applications for simulation tools B. Schick, W. Z. Liu, S. Stichel	39: Train Localization During GNSS outages: Exploiting Track Geometry Constraints and IMU Sensor Data W. Löffler, M. Bengtsson		71: Long term on-track test with EPS wheel profile L-O. Jönsson, J. Dolk
14:50	Fika				D-Ljusgård
Room	D1	D32	D34	D35	D37
Session 5	5.1 Infrastructure 5	5.2 Emerging Technologies 2	5.3 Signalling and Communication 2	5.4 Energy, Environment, and Climate	5.5 Operations and Traffic Planning 2
Chair	Martin Schilke	Mikael Wrang	Henrik Sylvan	William Liu	Stefano Ricci

15:20	28: A camera shake correction method for optical measurements in railways based on IMU sensors T. Jiang, G. T. Frøseth, A. Rønquist	85: Modelling of traction motors and power electronics for passive cooling analysis S. K. Abburu, C. Montsarrat, C. Casanueva, C. O'Reilly	96: On the Plausibility of using Existing Cellular Networks as Bearers of Train Signalling J. Garcia, C. Beckman, R. Reinham, A. Brunström	10: Innovative Initiatives of Italian Railway State Group for Sustainable Mobility L. Beccastrini, M. Tartaglia	74: Improving utilisation of rail freight routes by optimised routing method R. Bulteel, B. Djordjevic, B. Kordnejad
15:40	24: Prediction of differential track settlement in a transition zone using a calibrated non-linear track model K. Nasrollahi, J. C. O. Nielsen, J. Dijkstra, M. Ekh	84: Development and application of heavy-duty hydrogen energy hybrid shunting locomotive D. Jiang, L. Chen, J. Jiang, Y. Long, W. Guo	108: Railway Signal Digitalization with ERTMS and PTC, Industry 4.0 Expectations and Reality S. Harrod	36: Carbon footprint and possibilities of using recycled plastics in railway structures H. Luomala, R. Halme, I. Jönkkäri	78: Evaluation of train integrity concepts based on various criteria B. Djordjevic, B. Kordnejad, J. Bergstran
16:00	Closing remarks				D1

Floor plan and presentation rooms



D1	Plenary session and parallel session 1
D32	Parallel session 2
D34	Parallel session 3
D35	Parallel session 4
D37	Parallel session 5
D36	Technical support
D-Ljusgård	Registration and fika

Venue

The seminar takes place at the D-building, an iconic courtyard building on the KTH main campus. The plenary sessions will be in D1. Registration and the coffee breaks will be in the D-ljusgård.

Address: Lindstedtsvägen 9, Stockholm, Sweden

Lunch: Syster O Bror

Lab visit: Teknikringen 8

Boat cruise and dinner

Departure: 19:00 at Strandvägen kajplats 15

Arrival: 23:00 at Strandvägen kajplats 15

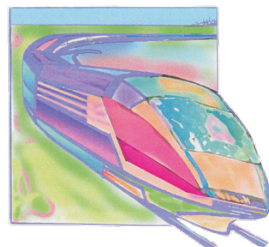
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