High Speed Railways

11.00 OVERVIEW OF WORLD TRENDS IN RAILWAYS, Chris Jackson, Railway Gazette International, Sutton, UK
High Speed Rail Track Innovation, Niall Fagan, HS2 Ltd, Birmingham, UK

Keynote Papers: Lecture Room 'A':

09.00: Conference Opening by Chair: Professor Mike Forde, PhD, FREng, FRSE, Hon.ACI, CEng, FICE, FIET, FPW, University of Edinburgh + Keynote Papers

08.15: Registration

10.30 - 11.00 Coffee – Exhibition Hall

11.00 - 13.00: Parallel Sessions

Lecture Room 'A':

High Speed Railways-1

Chair: Prof C Ho & Prof R Smith

- Monitoring of Railway Structures of the High Speed Line BPL with Bituminous & Granular Sublayers, D Khairallah & M Hosseingholian, Railenium, Paris, France
- Comparison of Technical Performance of a Discretely Supported Slab Track System & Embedded Slab Track System for High-Speed Railways, M Alkhateeb, A Ali, M Meersschaert, M Quenn, M Walle, Network Rail/London South Bank Unit, UK
- Holistic Assessment Approach for High-Speed Lines Maintenance & Renewal, A Dhemayed, G Gousseaux, S D Janpety, D A Ta, J-M Comat, A Schweiger Guillemant, A Hily, SNCF Résaux, La Plaine Saint Denis, France
- Uncertainty-Based Decision Making for Track Systems for High-Speed Rail Lines, V Sark, Veronika, Sweco, Stockholm, Sweden
- Assessment of Railway Critical Speed Based on an Experimental Analytical Approach, P Alves Costa, P Soares & A Colapo, Univ of Porto, Portugal & D Connelly, Univ of Leeds, UK

Rail & Rail Maintenance-1

Chair: Dr S Jovanovic & Dr H Parkinson

- Bistable Mechanism Improves Setting of Switch Rails, J Bos, Jelte, Movares Nederlands BV, Utrecht, Netherlands
- New Concepts of Railway SACS: Single Slender Switch & Vehicle Based Switch, L Hornych, J M Piau & L M Cottineau, IFSTTAR, Bouguenais, S Pouget, Eiffage, Corbas, A Ducreau, SNCF Résaux, Nanterre, F Savi, Setec, Paris, France
- New Concepts of Railway SACS: Single Slender Switch & Vehicle Based Switch, L Hornych, J M Piau & L M Cottineau, IFSTTAR, Bouguenais, S Pouget, Eiffage, Corbas, A Ducreau, SNCF Résaux, Nanterre, F Savi, Setec, Paris, France
- Track Quality Assessment & Maintenance Based on Vehicle/Track Interaction Measurements with "Viti Monitor", S Jovanovic, Univ of Novi Sad, P Tedić, "Tangram projekt" d.o.o., Novi Sad, Serbia, M Drcic, Ensco Inc., Springfield, USA
- New Profile of Crossing Optimized for Different Types of Wheel Tread Shapes, Y Yonehara, S Watanabe, I Arai, S Matsuo, Tokyo Metro Co Ltd, M Yohei, T Koyama, Ibaraki University, Japan
- Adjustable Rail Fastenings Abate Maintainance of Transitions, J Bos, Movares Nederlands BV, Utrecht, Netherlands

Railway Structures & Earthworks-1

Chair: J P Frottier & A de Man

- Case Histories of Track Deformations & Reducing the Risk of Structural Collapse, R Bukult, Asp, Bristol, UK
- Stability of the Teignmouth Sea Cliffs: The Past, Present & Future, T Lavery, Network Rail, Swindon, UK
- Which Load Model Do You Use for Rail Track Design?, L Moschen, D Pichler, VCE Vienna Consulting Engineers ZT GmbH, Wien, Austria, N Lesgidis, A Sexto, Aristotle Univ, Thessaloniki, Greece, J Lane, Rail Safety & Standards Board, London, UK
- Innovative Level Crossing, J P Frottier, Hol Elastomertechnik GmbH, Wiesbaden, Germany
- Road Level Crossing Problems & Solutions, L Lesley, Trampower, Liverpool, UK
- Embedded Rail Systems on Bridges: A Practical Key to Integral Design, A de Man, edicion[a]BV, Haarlem, Netherlands

13.30 – 14.00 Lunch – Exhibition Hall
14.00 – 16.00: Parallel Sessions

**Lecture Room ‘A’:**
- Chairs: Dr D Gunn & Dr J Hyslop

- **High Speed Railways-2**
  - ADVANCING THE APPLICATION OF GPR FOR BALLASTLESS TRACK FOR HIGH-SPEED RAILWAYS USING FULL SCALE TESTING, A Eisen, O Laghrouche, Herst/Wat Univ, Edinburgh, UK.
  - BALLASTED TRACK – A NEW MODEL OF A BALLASTLESS TRACK FOR HIGH-SPEED RAILWAYS USING FULL SCALE TESTING, A Eisen, O Laghrouche, Herst/Wat Univ, Edinburgh, UK.

- **Rail & Rail Maintenance - 2**

- **Railway Structures & Earthworks-2**
  - COMPARISONS SUPPORTING OVERHEAD LINE RAIL ELECTRIFICATION - KEY DESIGN ISSUES & OPPORTUNITIES, D Raynor, C Barnett, Ove Arup & Partners Ltd, Cardiff, UK.

**Lecture Room ‘B’:**
- Chairs: Dr S S Hsu & Dr B Counter

- **Ballasted Track – 1**
  - INNOVATIVE TEST MANAGEMENT FOR LITHOFUNE, NEW TRAMWAY IN Utrecht, G v.d Werf, Arcadia, Amsterdan, Netherlands.
  - ASSET MANAGEMENT FOR LIGHT RAILWAYS – AN INTEGRATED APPROACH BASED ON GERMAN LIGHT RAIL REGULATIONS (BOSTRA), R Schroeter, Stuttgart/Strassenbahnen AG.

- **Trams & Light Rail**
  - HYBRID METHOD FOR MONITORING OF REFLECTOR LEVEL IN HVAC FOR RAILWAY SYSTEMS, A Ilarri, R Arguedas, A Josuat, Saint-Quentin, France.
  - TRAFFIC LIVE LOAD MODEL & LOADING MEASUREMCNT FOR LIGHT RAILWAY GUIDWAYS IN KOREA, E S Heang, Y T Kim, Kyung Hee Univ, Yongin, Korea.

- **Railway Structures & Earthworks-3**
  - REDUCING THE IMPACT OF FLOODING ON RAILWAY OPERATIONS AT COWLEY BRIDGE JUNCTION, Exeter, UK, S Lynch, Ove Arup & Partners, Bristol, UK.
  - INTEGRATED MULTI-PHASE INVESTIGATIONS TO DETERMINE THE POTENTIAL FOR REOPENING AN HISTORICAL RAILWAY EMBANKMENT FOR URBAN LIGHT RAIL SYSTEM, B Jaeschke, JBA Consulting Ltd, Newcaslte, D Gunn, B Dawson, B Berin, BGS, Keyston, UK.

**Lecture Room ‘C’:**
- Chairs: Prof J Mander & P Reumers

- **High Speed Railways-2**
  - NEW INSIGHTS INTO RAILWAY TRACK DYNAMICS USING A MULTI-MODEL APPROACH, D Conolly, PK Woodward, Univ of Leeds, K Dong, Herst/Wat Univ, Edinburgh, UK.

- **Railway Structures & Earthworks-2**
  - AN INTELLIGENT VISION SYSTEM FOR INCREASING SAFETY & CAPACITY ON RAILWAY PLATFORMS, P Parkinson, Howard, Digital Rail Limited, Lancaster, UK.
  - ANALYSIS OF A BRIDGE APPROACH: LONG-TERM BEHAVIOUR FROM SHORT-TERM RESPONSE?, G Oprea, W Powers, L Le Pan, J Harkness, Univ of Southampton, UK.
  - REINFORCED RAILWAY TRANSITIONS TO REDUCE DIFFERENTIAL DISPLACEMENTS, T Stark, L Wyrin, Univ of Illinois Urbana-Champaign, USA.

16.00 – 16.30 Tea – Exhibition Hall

- **Lecture Room ‘A’:**
  - Chairs: Prof O Laghrouche & Dr H Wang
  - **Ballasted Track – 1**
    - TRACK SUBSTRUCTURE MAINTENANCE MANAGEMENT ON US RAILWAYS, H F Kashani, J Hysock, HyGround/Loram Maintenance of Way, Williamsburg, USA.
  - **Trams & Light Rail**

19.15 for 19.45 Royal Scots Club, Abercomby Place, Edinburgh, UK.

(Please note the Royal Scots Club’s Dress Code: Strictly no trainers or blue jeans; Men – Business Jacket with Tie; Ladies - dress/skirt or tailored trousers.)
Day 2: Thursday 4th July 2019

08.15: Registration - Exhibition Hall

08.15 - 09.00 Coffee – Exhibition Hall

09.00 - 10.30: Parallel Sessions

Keynote Papers: Lecture Room ‘A’:
HIGH SPEED RAIL TRACK DEVELOPMENTS IN CHINA, Prof Xuecheng Bian, Zhejiang Univ, Hangzhou, China

TRACK GEO-DYNAMICS AND DESIGN IN THE USA v. CHINA, Prof Carlton Ho, Univ of Massachusetts, Amherst, MA, USA

RAILWAYS IN RURAL AREAS: SOCIAL SUPPORT OR FINANCIAL DRAIN? Prof Roderick Smith, Imperial College London, UK

10.30 – 11.00 Coffee – Exhibition Hall

11.00 - 13.00: Parallel Sessions

Lecture Room ‘A’:
Chair: Dr M Wone & Prof X Bian

Ballasted Track - 2
- CROSSBIESE BALLAST INTERFACIAL PRESSURE TESTS: DEVELOPMENT OF A PROCEDURE & IN-TRACK REVENUE TRAIN MEASUREMENTS, J. Rose, T. Watts, E. Russell, D. Clarke, Univ of Kentucky, Lexington, KY, USA
- IN-TRACK CROSSBIESE BALLAST INTERFACIAL PRESSURE MEASUREMENTS & WHEEL IMPACT LOAD DETECTOR READINGS: RELATIONSHIPS & COMPARISONS, E. Russell, T. Watts, J. Rose, Univ of Kentucky, Lexington, KY, USA
- STATIC & DYNAMIC CROSSBIESE BALLAST INTERFACIAL PRESSURE MEASUREMENTS USING FRA RESEARCH TEST TRAIN, T. Watts, E. Russell, J. Rose, Jerry Univ of Kentucky, Lexington, KY, USA, D. Clarke. Univ of Tennessee, Knoxville, Knoxville, USA
- DESIGN & APPLICATIONS, & PERFORMANCE OF ASPHALT TRACKBEDS IN THE UNITED STATES, J. Rose, Univ of Kentucky, Lexington, KY, USA
- ADDRESSING GAUGE CLEARANCE CHALLENGES WITH SHALLOW DEPTH ASPHALT TRACKBEDS, L. coron, SNCF, Paris, France
- FATIGUE LIFE & SUSCEPTIBILITY TO MOISTURE OF BITUMINOUS MIXTURES FOR RAILWAY TRACKFORMS, C. Govan, M. Brough, AECOM UK Ltd, Nottingham, UK
- ADDRESSING GAUGE CLEARANCE CHALLENGES WITH SHALLOW DEPTH ASPHALT TRACKBEDS, C. Govan, AECOM UK Ltd, Nottingham, UK

Lecture Room ‘B’:
Chair: Dr-I-W Lee & N Fagan

Slab Track
- EMBEDDED RAIL SYSTEMS IN VARIOUS FORMS: KEY TO FAIR ASSESSMENTS ACCORDING TO THE EUROPEAN STANDARDS FOR FASTENING SYSTEMS, A. de Man, edito@padra BV, Haarlem, Netherlands
- VIBRATION ISOLATION OF TRACK STRUCTURES: WHAT IS INSERTION LOSS?, A. de Man, edito@padra BV, Haarlem, Netherlands
- MECHANIZED CONSTRUCTION PROCESS OF QUICK-HARDENING CONCRETE TRACK TO RENEWAL EXISTING BALLASTED TRACK, I. W. Lee & D. N. Yi, KRRI, Ulsan, Korea

Lecture Room ‘C’:
Chair: Prof C Ho & Dr D P Connolly

Railway Structures & Earthworks - 4
- STABILITY ANALYSIS OF PANTOGRAPH SECTOR SYSTEMS IN VARIOUS FORMS: KEY TO FAIR ASSESSMENTS ACCORDING TO THE EUROPEAN STANDARDS FOR FASTENING SYSTEMS, S. Pyo, Ulsan National Inst of Sci & Tech, Korea
- SURFACE RAIL DEFECTS, T. Vahlsing, R. Raum, R. Casperson, BAM, Berlin, A.Dey, DB Systemtechnik, Berlin, Germany
- ROLE OF IN-SERVICE VEHICLES IN THE MEASUREMENT & MONITORING OF THE RAILWAY SYSTEM, K. Hope, J. Hyslip, Hyground Engineering, Williamsburg, MA, USA
- REVIEW OF DIFFERENCES BETWEEN EFFECTS OF CONCRETE & TIMBER TIES ON BALLAST, A. Rohman, C. Ho, Univ of Massachusetts, Amherst, MA, H. Kashani, J. Hygoal, Hyground Engineering, Williamsburg, MA, USA
- IDENTIFYING RISKS ASSOCIATED WITH POOR DRAINAGE OF BALLASTED RAILWAY TRACK - HARDENING CONCRETE TRACK TO EMBEDDED RAIL, H. Kawashima, H. Iinuma, KIT, Japan, K. Hasegawa, Univ of Sheffield, UK
- EXPERIMENTAL INVESTIGATION ON THE EFFECTS OF SLEEPE R SHAPE ON BALLASTED TRACK SETTLEMENT, D. Sung, Daewon Univ, Jeju, S. Hong, Korea National Univ of Transp, Chungju, S. Pyo, Ulsan National Inst of Sci & Tech, Korea

14.00 - 17.30: Parallel Sessions

Lecture Room ‘A’:
Chair: H Thompson & Dr J Rose

Ballasted Track - 3
- USE OF DIGITAL TECHNOLOGY FOR TRACKBED REPAIR: A Case Study, I. Alibadi, H. Care, K. Kendall, Atkins, Birmingham, UK
- SIMULATION TOOL FOR DESIGNING LOW-NOISE RAILWAY SUPERSTRUCTURE CONSTRUCTIONS, J. Zhang, B. Lechner, B. H. Pasmore, TU Munich, Munich, Germany
- BALLAST DEGRADATION: A PREDICTIVE MODEL OF THE PRODUCTION OF FINE PARTICLES, I. Delis, G. Conn, F. Emelieci, Granola INP, C. Vincent & F. Ferriere, SNCF Rseau, D4Q VA-CIL, La Plaine St Denis, France
- RAILWAY TURNOUT CROSS CHALLENGES, L. Lesley, Trampower, Liverpool, UK
- BALLAST COMPACTNESS FOR TRACK RENEWAL WORKS: A NUMERICAL STUDY BY DEM SIMULATIONS, M. Wone, SNCF Rseau, La Plaine Saint Denis cedex, France

Lecture Room ‘B’:
Chair: Dr B Counter & C Jackson

Management of Railway Projects
- KEEPING UP TO DATE WITH THE OLD WAY OF DOING THINGS - COMPETENCE MANAGEMENT IN UK HERITAGE RAILWAY INDUSTRY, R. Baughan, S. Smith, Univ of Edinburgh, M. Crapper, Northumbria Univ, Newcastle upon Tyne, F. Shemida, Anglia Ruskin Univ, Chelmsford, UK
- SUCCESSFUL DELIVERY & MANAGEMENT OF GLOBAL SHARED CORRIDOR PROGRAMS, V. Mudhekar, Transportation Consultant, Princeton, West Windsor, USA
- ARE HYDROGEN TRAINS THE ANSWER?, Rail Engineer, Lithgow, Australia
- INTENSITY TRANSPORT MODE CHOICE BEHAVIOUR: A CASE STUDY OF THE RYADH-DAMMAM CORRIDOR, SAUDI ARABIA, H. Almajid, J. Preston, Univ of Southampton, UK
- IDENTIFYING RISKS ASSOCIATED WITH POOR DRAINAGE OF BALLASTED RAILWAY TRACK USING EXPERT ELICITATION; CASE STUDY AT ARDSLEY TUNNEL SITE, K. Umar, M. P. N. Burrow, G. S. Ghataora, Univ of Birmingham & M Shasta Network Rail, Milton Keynes, UK

Lecture Room ‘C’:
Chair: T Heckel & Dr S Kobayashi

Signalling & Electrification + Case Studies
- ROLE OF IN-SERVICE VEHICLES IN THE MEASUREMENT & MONITORING OF THE RAILWAY SYSTEM, K. Hope, Network Rail, Milton Keynes, UK
- TECHNICAL ENGINEERING BEST PRACTICES & OPERATIONAL BENEFITS GAINED THROUGH EFFECTIVE TROUBLESHOOTING & DMTS POST INSTALLATION, S. Roberson, L. Fornaini, Contax Wireless, Henley on Thames, UK
- STABILITY ANALYSIS OF PHOTOGRAPHIC DUE TO FRICTION FORCE & STRUCTURE MODIFICATION METHOD, S. Kobayashi, T. Ikeda, RTRI, Tokyo, Japan
- RAILWAY TIMETABLE ADJUSTMENT ON AIRPORT LOOP LINE USING MAX PLUS ALGEBRA WITH MODEL PREDICTIVE CONTROL, N. Nan, N. Vouleakis, E. Jodaski, H. Sularto, Institut Teknologi Bandung, Indonesia

16.00 onwards: Tea & Coffee – Outside Lecture Rooms - 17.30 Conference Closes

17.30 Conference Closes