IEEE ICIRT 2016

23rd -25th August 2016

Gisbert Kapp Building, 52 Pritchatts Road, Edgbaston, Birmingham B15 2SA, UK.

23nd August 2016

08:30-09:00	Morning Tea	The Link
09:00-10:00	Registration	Reception
10:00-10:10	Conference Opening	Lecture Theatre 2
10:10-10:20	IEEE Speech	Lecture Theatre 2
10:20-11:00	Keynote Speech –Keith Dierkx (IBM, US)	Lecture Theatre 2
11:00-13:00	Session 1: Traffic management	Lecture Theatre 1
	Session 2: Communication	Lecture Theatre 2
13:00-14:00	Lunch	The Link
14:00-16:00	Session 3: Train Control	Lecture Theatre 1
	Session 4: Power and Traction	Lecture Theatre 2
16:00-16:30	Tea Break	The Link
16:30-18:30	Session 5: Operation Management (1)	Lecture Theatre 1
	Session 6: Data Management	Lecture Theatre 2

24th August 2016

08:30-09:00	Morning Tea	The Link
09:00-10:00	Keynote Speech - Andrew Simmons (Network Rail, UK)	Lecture Theatre 2
10:00-12:00	Session 7: Operation Management (2)	Lecture Theatre 1
	Session 8: Instrument and Sensing	Lecture Theatre 2
12:00-13:00	Lunch	The Link
13:00-15:00	Session 9: Condition Monitoring	Lecture Theatre 1
	Session 10: Simulation and Testing	Lecture Theatre 2
15:00-15:30	Tea Break	The Link
15:30-17:30	Session 11: Aerodynamic and Infrastructure	Lecture Theatre 1
	Session 12: Safety and Security	Lecture Theatre 2
18:30-21:30	Banquet	Botanical Gardens

25th August 2016

09:30-10:00	Morning Tea	The Link
10:00-12:00	Session 13: Energy	Lecture Theatre 1
	Workshop: DEDOTS	Lecture Theatre 2
12:00-12:30	Conference Closing	Lecture Theatre 2
12:30-13:30	Lunch	The Link
14:00-16:00	Canal Boat Excursion (Optional)	

1. **Traffic Management**

   (1) Bus Lines Optimization Model Based On New Underground Lines
   - Chujun Song, Dingyou Lei And Yu-Pu Xiong
   - Central South University

   (2) Dynamic Train Rescheduling Using Alternating Algorithms
   - Linsha Dai, Clive Roberts And Felix Schmid
   - University of Birmingham

   (3) Real-time decision-support algorithms to optimize train order at junctions
   - François Ramond, Adrien Boillot and Nicolas Marcos
   - SNCF - Innovation & Research

   (4) Optimal train scheduling under a flexible skip-stop scheme for urban rail transit based on smartcard data
   - Peitong Zhang, Xiaobo Liu and Mei Chen
   - Southwest Jiaotong University

   (5) Train Trajectory Optimization of Opposite Trains on Single-Track Railway Lines
   - Pengling Wang and Rob M.P. Goverde
   - Delft University of Technology

   (6) Supervision and rescheduling of a mixed CBTC traffic on a suburban railway line
   - Juliette Pochet, Sylvain Baro and Guillaume Sandou
   - SNCF Reseau and CentraleSupelec-CNRS-Universite Paris Sud-Universite Paris Saclay

2. **Communications**

   (1) Rail Radio Intrusion Detection System (RRIDS) for Communication Based Train Control (CBTC)
   - Tony Melaragno, K R Damindra Bandara, Ajay Fewell and Duminda Wijesekera
   - George Mason University

   (2) The QoS analysis of train-ground communication system based on TD-LTE in urban rail transit
   - Xiaoxuan Wang, Hailin Jiang, Tao Tang and Hongli Zhao
   - Beijing Jiaotong University

(3) Robustness Study of ZigBee Networks in an EM Environment for Railway Signalling Systems
    - Armando Mendez-Villalon, Stephen Greedy and Dave W. P. Thomas
    - University of Nottingham
(4) Feasibility Analysis of Wireless Technologies for Railway Signalling Systems
    - Mohamed Samra, Shiemaa Sidahmed, Stephen Greedy and Armando Méndez
    - The University of Nottingham
(5) Information and Communication Technologies for Enhanced Emergency Management in Taiwan High Speed Rail
    - YI YIUNG JEN and S.K. Jason Chang
    - National Taiwan University

3. Train Control

(1) Next Generation of Train Control Systems - European research on the evolution of ETCS and CBTC systems
    - Peter Gurník
    - UNIFE - the European Rail Industry
(2) The Next ETCS Level?
    - Colin Williams
    - SNC-Lavalin
(3) Performance Degradation Based Reliability Prediction Method for CTCS On-board Equipment
    - Baigen Cai, Fengjiao Zhang, Wei Shangguan, Jian Wang and Lei Chen
    - Beijing Jiaotong University
(4) A real-time algorithm for train position monitoring using optical time-domain reflectometry
    - Adam Papp, Christoph Wiesmeyr, Martin Litzenberger, Heinrich Garn and Walter Kropatsch
    - AIT Austrian Institute of Technology
(5) Modeling of ZPW-2000A Frequency-shift and Pulse Track Circuit
    - Zhichao Qiao, Zhixin Wang and Lu Zhang
    - Beijing National Railway Research & Design Institute of Signal & Communication Group Co., Ltd

(6) Analysis and design of driver advisory system for energy-efficient train operation with real-time information

- Hainan Zhu, Xubin Sun, Lei Chen, Shigen Gao and Hairong Dong
- Beijing Jiaotong University

4. Power and Traction

(1) Modeling and Simulation of Railway Electric Traction with Vector Control Drive

- Mahran Quraan and Jamal Siam
- Birzeit University

(2) Improving Thrust Performance of Linear Induction Motor by Reducing Magnetic Flux Leakage through Chamfering

- Khalid Hasnan, Erwan Sulaiman and Syahmi Shaari
- Universiti Tun Hussein Onn Malaysia

(3) Research on New Traction Power System Using Power Flow Controller and Vx Connection Transformer

- Minwu Chen, Xiaozhou Zhu, Shaofeng Xie and Jie Luo
- Southwest Jiaotong University

(4) Energy-efficient train control including regenerative braking with catenary efficiency

- Gerben Scheepmaker and Rob Goverde
- Netherlands Railways/TU Delft

(5) Evaluation of Permanent Magnet Motor Energy Saving for Different Railway Networks

- Heather Douglas, Clive Roberts and Stuart Hillmansen
- University of Birmingham

(6) Hierarchical energy management of multi-train railway transport system with energy storages

- Hrvoje Novak, Mario Vašak and Vinko Lešić
- University of Zagreb

5. Operation Management (1)

(1) An Analysis on the Lengths of Time Passengers Spend at Railway Termini Using Smart Card Data

- Taku Fujiyama and Bolun Cao
- University College London

(2) Intelligent Platform Management

- Antonis Phasouliotis and Colin Williams
- SNC-Lavalin

(3) How do principles for human-centred automation apply to Disruption Management Decision Support?

- David Golightly and Nastaran Dadashi
- University of Nottingham

(4) TRACK/RAILS: a distributed application and content management framework for railway operators

- Bruno Volckaert, Wannes Kerckhove, Thomas Dupont, Dirk Van Den Wouwer and Filip De Turck
- iMinds-IBCN-University of Ghent

(5) Passengers' anxiety about using the London Underground

- Jisun Kim and Olinkha Gustafson-Pearce
- Brunel University

(6) OpenGOV, Track Allocation Made Easy

- Baptiste Martin
- SNCF

6. Data Management

(1) A scalable software framework for real-time data processing in the railway environment

- Jabran Bhatti, Bruno Volckaert, Wannes Kerckhove, Thomas Dupont and Dirk Van Den Wouwer
- Televic Rail NV

(2) An in-depth learn from incidents (LFI) approach based on HFACS-RAs

- Qingjian Zhan and Wei Zheng
- Beijing Jiaotong University

(3) Anonymity-based Data Publishing for Preserving Customer Privacy in Railway Systems

- Yidong Li and Hairong Dong
- Beijing Jiaotong University

(4) Real World Verbal Protocol Data Analysis of European Rail Traffic Management System Train Driving And Conventional Train Driving

- Arzoo Naghiyev, Brendan Ryan, Sarah Sharples, Anthony Coplestone And Mike Carey
- University of Nottingham & Network Rail

7. Operation Management (2)

(1) Stochastic scheduling approach for predictive risk-based railway maintenance

- Alice Consilvio, Angela Di Febbraro and Nicola Sacco
- University of Genoa-DIME

(2) Train Timetabling during Infrastructure Maintenance Activities

- Diego Arenas, Paola Pellegrini, Said Hanafi and Joaquin Rodriguez RAILENIUM - UVHC - IFSTTAR

(3) Railway disruption timetable: Short-turnings in case of complete blockage

- Nadjla Ghaemi, Rob Goverde and Oded Cats
- TU Delft

(4) Ultra-high Frequency Train Operation for the Realization of Ultra-Convenient Rail Transport (UCRT)

- Ryo Takagi and Takahiro Shimizu
- Kogakuin University

(5) Application of System Dynamics Tools to Model 24-Hour Metro Systems

- Mohammad Reza Zolfaghari, Clive Roberts and Felix Schmid
- University of Birmingham

(6) Development of a high-level feasibility analysis model for the selection of railway upgrade options

- XINDI CHEN, Gemma Nicholson and Clive Roberts
- University of Birmingham

(7) Systems Engineering Framework for Railway Control & Safety Systems

- Karl M King
- University of Birmingham

8. Instrument and Sensing

(1) Safe odometry for high-speed trains

- Diego Herrero Murillas and Luc Poncet

- SNCF, Rolling Stock Engineering Centre (CIM), Le Mans

(2) Disruption: a new component in the track inspection schedule

- Mohd Haniff Bin Osman, Sakdirat Kaewunruen, Min An and Serdar Dindar
- University of Birmingham

(3) Optimising Train Axle Inspection with the Implementation of Human-Robot Collaboration: A Human Factors Perspective

- Georgios Charalambous and Martin Stout
- SNC-Lavaling, Rail and Transit

(4) Low Power and Low Cost Sensor\\for Train Velocity Estimation

- Max Spindler
- Karlsruhe Institute of Technology

(5) Automatic railway track surveillance using a dGNSS enabled mobile onboard unit in loading optimization

- Martin Novak, Christian Herneth and Gerhard Ankerl
- prosoft sud consulting gmbh

(6) Camera Based Driver Support System for Rail Extraction using 2-D Gabor Wavelet Decompositions and Morphological Analysis

- Alper Selver
- Dokuz Eylul University

9. Condition Monitoring

(1) Intelligent fault diagnosis and predication technologies for condition based maintenance of track circuit

- Xiaomin Wang, Jin Guo, Lei Jiang, Jiawei Fu and Bin Li
- Southwest Jiaotong University

(2) Study on the Effect of Compensation Capacitors on Broken Rail Detection in Audiofrequency Track circuits

- Xinsheng Zhou, Zhixin Wang and Zhiming Liu
- Beijing National Railway Research & Design Institute of Signal & Communication Group Co.,Ltd

(3) Assessing the Usage Feasibility of TV White Spaces for Railway Communication Applications

- Mohamed Samra, Lei Chen, Clive Roberts, Costas Constantinou and Anil Shukla

- University of Birmingham

(4) Track Irregularity Fault Identification Based on Evidence Reasoning Rule
    - Xiao-bin Xu, Jin Zheng, Jian-bo Yang, Dong-ling Xu, Xin-ya Sun and Cheng-lin Wen
    - Hangzhou Dianzi University
(5) Managing Rail Corrugation through Modelling, Simulation, and Instrumentation Technologies
    - Andrew Keong Ng, Zulkifli Bin Alias, Jean-Francois Chassin and Jorge Yebra
    - Singapore Institute of Technology
(6) Analysis on Traction Current Harmonic and Immunity Test Limit of Track Circuit in High Speed Railway
    - Shiwu Yang
    - Beijing Jiaotong University

10. Simulation and Testing

(1) Simulation model of speed control mechan*is*ms for the moving-block systems under ERTMS Level 3
    - Ronghui Liu
    - University of Leeds
(2) On-line Conformance Testing of the Communication-Based Train Control System
    - Yuemiao Wang, Clive Roberts and Lei
    - University of Birmingham
(3) A Model-based Test Case Generation Method for Function Testing of Train Control Systems
    - Jidong Lu, tao tang, Haifeng Wang, Hongjie Liu and Lu Zhang
    - Beijing jiaotong university
(4) Towards Integrated Simulation and Formal Verification of Rail Yard Designs - an Experience Report Based on the UK East Coast Mainline
    - Lei Chen, Phillip James, David Kirkwood and Markus Roggenbach
    - Swansea University
(5) D-MOD Dynamic Modelling of Operator Demand A new simulator module for the evaluation of signaller's demand
    - Lise Delamare, David Golightly, Peter Treble and Andy Lumby

- University of Nottingham/Hitachi ICSE

(6) Interpolating and Denoising Point Cloud LIDAR Data for Computationally Efficient Environment Modeling

- Alper Selver and Yesim Zoral
- Dokuz Eylul University

11. Aerodynamic and Infrastructure

(1) Experimental study on vibration displacement of a CRH2 EMU under strong wind conditions

- DR Liu, ZJ Lu, TP Cao and Lei Zhang
- Central South University

(2) Influence of sound-absorbing panels on the aerodynamic performance of train in open air

- Tian yun Dong, Xi feng Liang and Jie Zhang
- Central South University

(3) Aerodynamic Analysis of Trains with Different Streamlined Lengths of Heads

- ZW Chen, TH Liu and XS Zhou
- Central South University

(4) New recycled aggregates with enhanced performance for railways track bed and form layers

- Miquel Morata and Carlos Saborido
- COMSA

(5) Impact of the Heat Release Rate to the Flow Characteristics of Fire Smoke in Subway Tunnel Under the Effect of Piston Wind

- Na Zhang and Dan Zhou
- Central South University

(6) Investigation on fatigue life of Rail-Wheel assembly using Finite Element Analysis

- Gurdeep Singh, VINOD KUMAR and RAVINDRA K. SAXENA
- DAV University Jalandhar

12. Safety and Security

(1) A system dynamics model for railway workers' safety behaviors

- Xingliang Da and Wei Zheng
- Beijing Jiaotong University

(2) A Human Reliability Analysis Method based on Cognitive Process Model for Risk Assessment
    - Huimin Ye and Wei Zheng
    - Beijing Jiaotong University
(3) Scenario Based STPA Analysis In Automated Urban Guided Transport System
    - Fei Yan And Tao Tang
    - Beijing Jiaotong University
(4) Exploiting redundancy and path diversity for railway signalling resiliency
    - Igor Lopez, Marina Aguado, Denis Ugarte, Alaitz Mendiola and Marivi Higuero
    - University of the Basque Country (UPV/EHU)
(5) Towards Safety Monitoring of ETCS level 2 with Parametrized Extended Live Sequence Charts
    - Ming Chai, Jidong Lv, Hongjie Liu and Lu Zhang
    - Beijing Jiaotong University
(6) Reliability Evaluation of Interlocking Software Based on Improved NHPP Model
    - Weiqi Wang and Shenghua Dai
    - Beijing Jiaotong University

13. Energy

(1) System Energy Optimisation of Metro-transit System using Monte Carlo Algorithm
    - Zhongbei Tian, Paul Weston, Stuart Hillmansen, Clive Roberts and Ning Zhao
    - University of Birmingham
(2) Investigation into Train Positioning Systems for Saving Energy with Optimised Train Trajectories
    - Hassan Abdulsalam Hamid, Gemma Nicholson, Heather Douglas, ning zhao and Clive Roberts
    - University of Birmingham
(3) Scheduling Method for Minimum Energy Consumption Considering Constraints of Time Intervals between Local and Express Trains
    - Koji Nomura and Masafumi Miyatake
    - Sophia University

(4) A Two-layer Construction of Energy Optimization Approach for Time Table
    - FANG CAO, Zhibin LIAO and Shuqi Liu
    - Beijing Jiaotong University
(5) Punctual Train Operation with Energy-saving Driving Advisory System in Dense Traffic Railway
    - Yukinori Tonosaki, Yoshihiro Koizumi, Miyako Miyoshi, Masahiro Tajima, Toyoyuki Takeba and Masafumi Miyatake
    - Toshiba
(6) A train regulation approach for energy-saving: a case study for Beijing metro line
    - Shuai Su, Tao Tang, Jing Xun, Yihui Wang and Fang Cao
    - Beijing Jiaotong University