UNIVERSITY OF BIRMINGHAM

1964
2064
HIGH SPEED RAIL
CELEBRATING AMBITION

Conference programme

8 – 10 December 2014

1964–2064 High Speed Rail: Celebrating Ambition

2014 marks the 50th anniversary of the world's first true high speed railway, the Shinkansen line in Japan. The University of Birmingham and Central Japan Railway Company are marking the occasion by holding this special conference to celebrate the achievements of engineers and operators during the past 50 years and to identify the technical, economic and systems issues that must be addressed for success in the next 50 years.

Organised by the Birmingham Centre for Railway Research and Education

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Monday 8 December

12:00 – 12:50	Registration and Lunch – Foyer, Bramall Music Building		
	Geotechnics – Arts Building, LR5 Chair: Dr Gurmel Ghataora	**Operations –** Arts Building, LR7 Chair: Rhianne Evans	**Infrastructure and Vehicles –** Watson Building LTB Chair: Heather Close
13:00 – 13:20	**Improvement of Soft Subgrade Soil Using Stone Columns for High Speed Railway Track** Samir Ashour, Gurmel Ghataora, Ian Jefferson and Michael Burrow (University of Birmingham)	**High Speed 2: Putting the passenger at the heart of design** Andrew McNaughton, Theresa Clarke (HS2 Ltd), Ian Wright, Ping Teo and Sultana Idris (Passenger Focus)	**The Influence of structural response on ballast performance on a high speed railway viaduct** David Milne, Louis Le Pen, William Powrie, David Thompson, Geoff Watson (University of Southampton), Simon Morley and Mick Hayward (Network Rail High Speed Ltd)
13:20 – 13:40	**Modelling and measurements of critical train speed effects and associated track movements** Alice Duley, Louis Le Pen, David Thompson, William Powrie, Geoff Watson (University of Southampton), Peter Musgrave and Andrew Cornish (Network Rail, London)	**Aesthetics and Usability of High-Speed Rail Stations** Mohammad Reza Zolfaghari and Felix Schmid (University of Birmingham)	**Remote Condition Monitoring of High Speed Railway Trackbed** Michelle Lim, Stoil Ivanov, Robert De Bold, Antonios Giannopoulos, Michael Forde (University of Edinburgh) and David Connolly (Heriot-Watt University)
13:40 – 14:00	**Improving Ground Vibration Modelling Accuracy Via Full Scale Experimental Testing Across Europe** David Connolly (Heriot Watt University), Georges Kouroussis (UMons, Belgium), Pedro Alves Costa (UPorto, Portugal), Peter Woodward, Gabriela Medero, Sara Mezher, Omar Laghrouche (Heriot Watt University) and Michael Forde (University of Edinburgh)	**High speed rail and questions of energy** Jing Zhou and Roderick Smith (Imperial College London)	**Rolling Stock Technology for the Future** Roger Goodall and Christopher Ward (Loughborough University)
14:00 – 14:20	**Scoping Exercise to Estimate Critical Velocity of Trains from Rayleigh Waves Using Conventional Site Investigation Data** David Connolly (Heriot-Watt University), Ir Georges Kouroussis (UMons, Belgium) and Michael Forde (University of Edinburgh)	**Lean Operation for New High-Speed Railways** Daisuke Hasegawa (University of Birmingham), Vera Novak (Virginia Polytechnic Institute and State University), Gemma Nicholson, Clive Roberts and Felix Schmid (University of Birmingham)	**Flying Trains: The potential to harness ground effect aerodynamics for ultra high speed trains** Robert Dominy (Durham University)
14:20 – 14:35	**Questions and Discussion**	**Questions and Discussion**	**Questions and Discussion**
14:35 – 15:00	Refreshments – Foyer, Bramall Music Building		
	Aerodynamics – Arts Building LR5 Chair: Dr Andrew Quinn	**Capacity –** Arts Building, LR7 Chair: Vijay Ramdas	**Control –** Watson Building LTB Chair: Professor Felix Schmid
15:00 – 15:20	**Component-based models to predict aerodynamic noise from high-speed trains** Eduardo Latorre Iglesias, David Thompson and Malcolm Smith (University of Southampton)	**High Speed Rail – a Thought on Capacity** Ryo Takagi (Kogakuin University)	**Security-informed Railway Safety** Xiaocheng Ge and John McDermid (University of York)
15:20 – 15:40	**Analysis of flow and aerodynamic noise behaviour of a simplified high-speed train bogie inside the bogie cavity** Jianyue Zhu, Zhiwei Hu and David Thompson (University of Southampton)	**High Speed Railway Capacity – Understanding the factors affecting capacity limits for a high speed railway** Piers Connor (University of Birmingham)	**High-Speed Railway Signalling System in China** Guo Jin, Zhang Yadong (Southwest Jiaotong University), Wang Haifeng (Beijing Jiaotong University) and Zhang Zaiming (CCS LR Technical Services Limited, Beijing)
15:40 – 16:00	**Unsteady aerodynamics and noise from interaction of cylinder with cavity flow** Zhiwei Hu, Xiaowan Liu and Christian M Rodriguez (University of Southampton)	**The Growth of the Turkish High Speed Rail Network** Merve Mercimek (Turkish State Railways)	**Dynamic Safety Monitoring Approach Based on Safety Case in Railway System** Ke Li (University of Birmingham) and Xiaocheng Ge (University of York)
16:00 – 16:15	**Questions and Discussion**	**Questions and Discussion**	**Questions and Discussion**
	Keynote presentations – Elgar Concert Hall, Bramall Music Building		
16:30 – 16:35	**Welcome**		Professor Felix Schmid, BCRRE
16:35 – 17:00	**High Speed: The Second Age of Rail**		Murray Hughes, Railway Gazette
17:00 – 17:10	**A total system approach to capacity**		Andrew McNaughton, HS2 Ltd
17:10 – 17:40	**How innovation in a competitive open market has been a decisive factor in the Haramain Project – Saudi Arabia**		Mario Oriol, Talgo
	Evening reception – Bramall Music Building Foyer, University of Birmingham		
18:00 – 20:00	Welcome reception hosted by Professor Clive Roberts, Director of the Birmingham Centre for Railway Research and Education		

Tuesday 9 December

08:00 – 09:00	Registration and Refreshments – Bramall Music Building	
09:00 – 09:15	**Welcome**	Professor Jon Binner, University of Birmingham Sir David Eastwood, University of Birmingham Noriyoshi Yamagami, Embassy of Japan
09:15 – 09:25	**HS2 nowhere? A historical perspective on the case for high-speed rail in the UK**	Professor Colin Divall
09:25 – 09:45	**50 years of Shinkansen – High-speed Rail pioneer**	Yoshinori Hatta, JR Central
09:45 – 10:05	**Extending the High Speed Rail legacy**	Hironori Tsujimura, JR East
10:05 – 10:25	**The technical history of the Shinkansen**	Koji Agatsuma, Hitachi Rail Europe
10:30 – 10:55	Refreshments	
	Elements: Key Challenges and Solutions	
11:00 – 11:35	**Track**	Professor Peter Woodward, Heriot-Watt University Andrew Went, HS2 Ltd
11:35 – 12:10	**Aerodynamics**	Professor Chris Baker, University of Birmingham Richard Sturt, Arup
12:10 – 12:45	**Environment**	Professor David Thompson, University of Southampton Richard Collinson, Atkins
12:45 – 13:45	Lunch	
13:50 – 14:25	**Power**	Dr Stuart Hillmansen, University of Birmingham Mark Howard, HS2 Ltd
14:25 – 15:00	**Command, Control and Communications**	Professor Clive Roberts, University of Birmingham Sam Daw, Thales
15:00 – 15:25	Refreshments	
	Stimulus: The Economic Benefits of High Speed Rail	
15:30 – 15:40	**Introduction**	Professor Roderick Smith
15:40 – 15:50	**Investment Opportunities in Japan and abroad**	Alistair Dormer, Hitachi Rail Europe
15:50 – 16:00	**Economic Development for cities and regions**	Duncan Sutherland, HS2 Ltd
16:00 – 16:10	**Integrating a Country**	Pierre Messulam, SNCF
16:10 – 16:20	**The Creation of Smart Cities**	Professor Dr Uwe Krueger, Atkins
16:20 – 17:30	**Panel Discussion**	Panel joined by Iñaki Barrón de Angoiti, UIC Chaired by Professor Roderick Smith and Professor Felix Schmid
	Gala Dinner – The Banqueting Suite, Birmingham City Council House Dress code: Smart eveningwear	
19:00 – 19:30	Drinks Reception	
19:35 – 19:40	Welcome from Sir Albert Bore, Leader of Birmingham City Council	
19:40 – 19:55	Guest Speaker Professor Roderick Smith	
19:55 – 20:00	*Kagami Biraki* of Sake	
20:00 – 22:00	Dinner	

Wednesday 9 December

	Integration	
08:00 – 09:00	Registration and Refreshments	
09:00 – 09:05	**Welcome**	Rhianne Evans, University of Birmingham
09:05 – 09:25	**Capturing the Benefits of High Speed Rail – global case studies and lessons learnt**	Colin Stewart, Arup
09:25 – 09:45	**Interchange design and integrating High Speed Rail**	Leszek Dobrovolsky, Arup
09:45 – 10:20	**New challenges for high speed rail**	Andrew Went, HS2 Ltd Alain Sauvant, Réseau Ferré de France
10:20 – 10:55	**Designing Stations for People**	Stan Doyle, Atkins Laura Kidd, HS2 Ltd
11:00 – 11:25	Refreshments	
	Visions	
11:30 – 11:50	**The Siemens Vision for the Future**	Nick Watson, Siemens
11:50 – 12:10	**The Hitachi Vision for the Future**	Andy Barr, Hitachi
12:10 – 12:30	**Future Visions for High Speed Rail**	François Lacôte
12:30 – 12:45	**Questions and Discussion**	
12:45 – 13:45	Lunch	
	Action	
13:50 – 14:00	**A Systems View of Future Research**	Dr Jon Elphick, Thales Ground Transportation Systems UK Limited
14:00 – 15:00	**Panel-led Workshop: Research Orientation for the Future of High Speed Rail**	Panel joined by: Andy Doherty, Network Rail Professor Roger Goodall, Loughborough University Dr Stuart Hillmansen, RRUKA Academic Co-chair
15:00 – 15:15	**Closing Remarks**	Professor Felix Schmid, University of Birmingham

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