WELCOME

With the rapid development of Chinese high-speed railways, heavy-haul railways and urban rail transits, China has been increasingly influencing the world railway industry. Especially, a great achievement has been made in the development of Chinese high-speed railway which has the largest scale all over the world. By the end of 2016, the mileage of Chinese high-speed railway has exceeded 2,2000 km which accounts for 65% of world mileage. According to the new "Chinese mid-long term plan of railway network", the railway network in China will reach 150,000 km by the year of 2020, where high-speed railways will be 30,000 km that covers more than 80% of the major cities. Currently, Chinese high-speed railway has entered the new stage of "long-term, safe, and stable operation and maintenance" from the stage of "design and construction", which also brings a series of new problems and new challenges to scientists, researchers and engineers.

ICRT2017, the First International Conference on Rail Transportation is a premier venue and will be one of the largest gatherings of research and engineering people in railway. Southwest Jiaotong University in Chengdu is honored to sponsor and host this conference which is also co-sponsored by 12 well-known universities and institutions in this filed. This conference provides an international forum for scientists, researchers, and engineers around the world to promote the exchange of the latest scientific and technological innovations in rail transportation; and to advance the state-of-the-art in engineering and practices for various types of rail-based transportation systems.

The conference series cover all main areas of rail vehicles, infrastructure, traction power, operation, communication, and environment. The papers presented at ICRT 2017 are subdivided into the following sub-areas: (a) railway vehicle, (b) railway track, (c) railway induced environmental vibration and noise, (d) vehicle-track-bridge interaction, (e) catenary system, (f) railway subgrade, (g) wheel/rail contact, (h) railway bridge (i) inspection and maintenance, (j) electrification, communication and control, and (k) transportation & management. This conference has received tremendous supports from all over the world, it has accepted 195 full papers from 22 countries, and 158 oral presentations have been selected by the conference committees, around half of which are from outside China. These papers well manifest the recent progress of the above research areas. And best papers awards for technical contribution, young professionals and students will be granted to the delegates at the closing ceremony.

Warmly welcome all the delegates to participate ICRT2017. I would like to express our sincere thanks to the members of the Organizing Committee, the members of the International Scientific Committee and, in particular, all the authors and participants for their essential and valuable contributions.

Warmly welcome to Chengdu. The city of Chengdu and its surroundings feature one of the most attractive locations in Southwest China in terms of its geography, history, and natural beauty, which the conference attendees are encouraged to explore after the closing ceremony.

Prof. Wanming Zhai

ICRT2017 Chairman

Chair professor of Southwest Jiaotong University, China

Academician, Chinese Academy of Sciences

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PRACTICAL INFORMATION

Dates

July 10 (Monday) — July 12 (Wednesday), 2017.

Venue

Wangjiang Hotel, Chengdu, China.

Address: No.42, Xiashahepu Street, Chengdu, Sichuan, China

Tel: (+86)-28-84790000

Website: http://www.wangjianghotel.com/index.html

Contacts

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Dr. Enhui Yang, Southwest Jiaotong University, China

Address: No.111 First Section, North of Second Ring Road, Chengdu 610031, China

Email: icrt2017@home.swjtu.edu.cn.

Tel: (+86)-28-86466204, (+86)-28-87634663

Website: http://www.icrt-swjtu.org/

Internet Access

Free internet access and WI-FI is available at all conference venues without password.

Registration

The registration and information desk will open at 09:00 a.m. on Sunday July 9 at the lobby of Wangjiang Hotel. The access to all the general assembly activities is subject to registration. The invoices can be processed in US dollars (USD) or Chinese Yuan (RMB). If you did not pay the registration fee online, you can pay it at the registration desk. The registration fee is $600/¥3900 for the delegate, $350/¥2300 for the student and $100/¥650 for the companion.

Buffets & Coffee Breaks

Lunch buffets and dinner buffet will be served at the Songtao Restaurant. Halal food are available. Coffee breaks will be between the sessions, coffee as well as snacks are available.

Conference Reception and Gala Dinner

The conference reception will be held at the Phuket Restaurant (普吉岛餐厅) on Sunday July 9, 2017 starting at 18:00. The gala dinner will be held at the Songtao Restaurant (松涛餐厅) on July 11, 2017 starting at 18:30. The conference reception and the gala dinner will also offer halal food.

Climate and Power Supply

In early July, the weather in Chengdu is relatively sultry and rainy. The average daily temperature varies between 22℃ and 31℃.

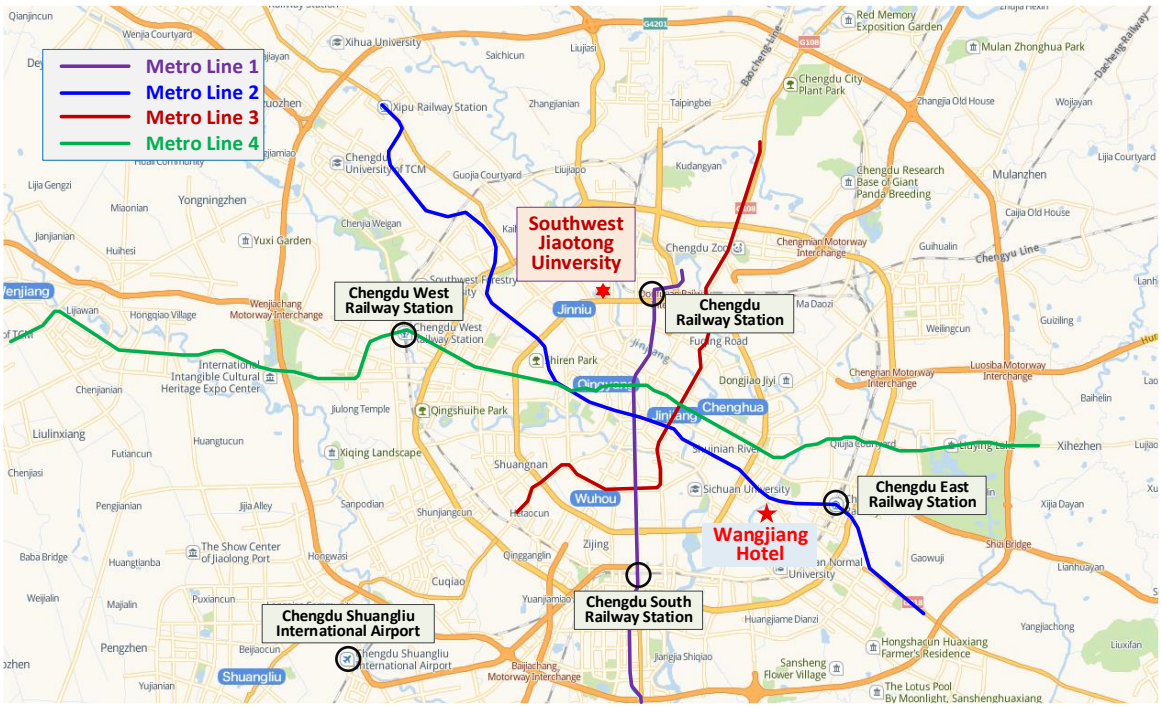
220 volts AC, 50Hz electricity is supplied in China. Continental two-pin and three-pin plugs are in use. Depending on your country, you may need an adapter.

Medical Team

The medical team will be on standby whole day at Room 121 (Wufu Building).

Maps and Public Transportations

Map of Chengdu



To Wangjiang Hotel by different means of transportation

By taxi:

Show the following message to the driver:

English: Please take me to Wangjiang Hotel.

Chinese:师傅，麻烦您送我到望江宾馆五福楼大厅(下沙河铺街 42 号)。

By metro:

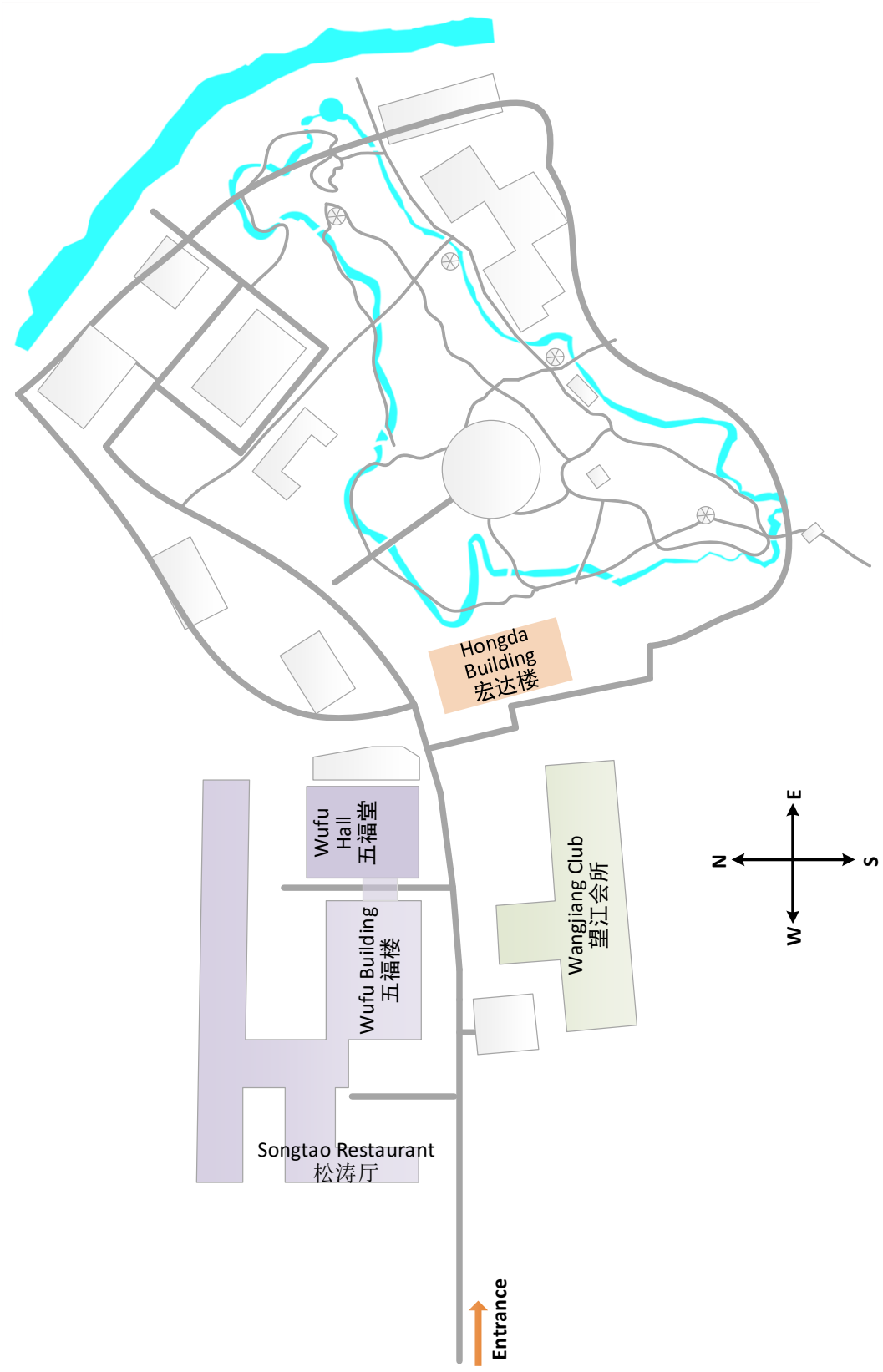
Get off at Dongda Road Station (东大路站), Metro Line 2.

By bus:

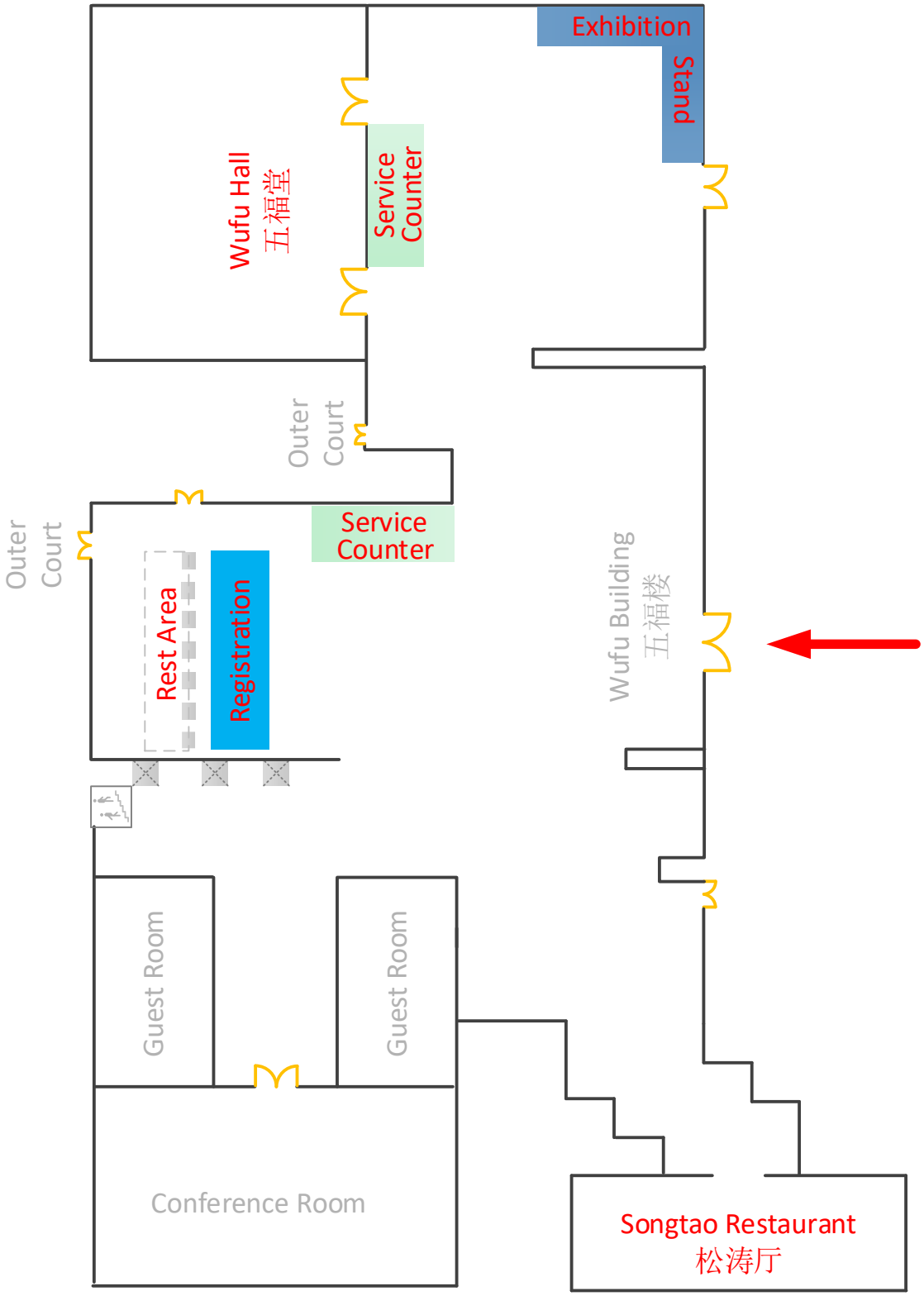
Get off at Xiashahepujie Station (下沙河铺街站).

Two bus lines can reach this bus station, including Bus Line 47 and Bus Line 104.

Map of Wangjiang Hotel



Sketch of the 1st Floor of Wufu Building



AGENDA

Program Overview

Date	Time	Event			
July 9 (SUN)	9:00-23:00	Arrival & Registration (the lobby of Wangjiang Hotel)			
	18:00-19:30	Conference Reception at Phuket Restaurant(普吉岛餐厅) 1F, Wangjiang Club			
July 10 (MON)	8:30-9:00	Opening Ceremony (Wufu Hall)			
	9:00-10:20	Plenary Keynote Speech Session (Wufu Hall)			
	10:20-10:50	Group Photo and Coffee Break			
	10:50-12:00	Plenary Keynote Speech Session (Wufu Hall)			
	12:00-13:30	Lunch Break at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			
	14:00-15:40	Session 1-1: Railway Vehicle 1	Session 2-1: Railway Track 1	Session 3-1: Railway Induced Environmental Vibration and Noise 1	Session4-1: Electrification, Communication and Control
		International Conference Hall 国际会议厅 (2F,Wufu Building)	Sentosa Hall 圣淘沙会议厅 (4F, Wangjiang Club)	Boya Hall 博雅厅 (1F, Wufu Building)	Brumei Darussalam Hall 文莱厅 (2F,Wangjiang Club)
	15:40-16:00	Coffee Break			
	16:00-18:10	Session 1-2: Railway Vehicle 2	Session 2-2: Railway Track 2	Session 3-2: Railway Induced Environmental Vibration and Noise 2	Session 4-2: Transportation & Management
		International Conference Hall 国际会议厅 (2F,Wufu Building)	Sentosa Hall 圣淘沙会议厅 (4F, Wangjiang Club)	Boya Hall 博雅厅 (1F, Wufu Building)	Brumei Darussalam Hall 文莱厅 (2F,Wangjiang Club)
	18:15-19:30	Dinner Buffet at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			

July 11 (TUES)	8:30-10:10	Session 1-3: Railway Vehicle 3 International Conference Hall 国际会议厅 (2F,Wufu Building)	Session 2-3: Railway Track 3 Sentosa Hall 圣淘沙会议厅 (4F, Wangjiang Club)	Session 3-3: Catenary System Boya Hall 博雅厅 (1F, Wufu Building)	Session 4-3: Railway Bridge Brumei Darussalam Hall 文莱厅 (2F,Wangjiang Club)
	10:10-10:30	Coffee Break			
	10:30-12:25	Session 1-4: Railway Vehicle 4 International Conference Hall 国际会议厅 (2F,Wufu Building)	Session 2-4: Railway Subgrade Sentosa Hall 圣淘沙会议厅 (4F, Wangjiang Club)	Session 3-4: Wheel/Rail Contact 1 Boya Hall 博雅厅 (1F, Wufu Building)	Session 4-4: Vehicle-Track-Bridge Interaction 1 Brumei Darussalam Hall 文莱厅 (2F,Wangjiang Club)
	12:30-13:30	Lunch Break at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			
	14:00-15:40	Session 1-5: Railway Vehicle 5 International Conference Hall 国际会议厅 (2F,Wufu Building)	Session 2-5: Railway Inspection and Maintence 1 Sentosa Hall 圣淘沙会议厅 (4F, Wangjiang Club)	Session 3-5: Wheel/Rail Contact 2 Boya Hall 博雅厅 (1F, Wufu Building)	Session 4-5: Vehicle-Track-Bridge Interaction 2 Brumei Darussalam Hall 文莱厅 (2F,Wangjiang Club)
	15:40-16:00	Coffee Break			
	16:00-18:10	Session 1-6: Train-Track Interaction International Conference Hall 国际会议厅 (2F,Wufu Building)	Session 2-6: Railway Inspection and Maintence 2 Sentosa Hall 圣淘沙会议厅 (4F, Wangjiang Club)	Session 3-6: Wheel/Rail Contact 3 Boya Hall 博雅厅 (1F, Wufu Building)	Session 4-6: Vehicle-Track-Bridge Interaction 3 Brumei Darussalam Hall 文莱厅 (2F,Wangjiang Club)
	18:30	Gala Dinner at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			
July 12 (WED)	8:30-10:15	Plenary Keynote Speech Session (Wufu Hall)			
	10:15-10:45	Coffee Break			
	10:45-11:55	Plenary Keynote Speech Session (Wufu Hall)			
	11:55-12:30	Closing Ceremony (Wufu Hall)			
	12:30-13:30	Lunch Break at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			
	14:00-17:00	Technical Visit			

Plenary Keynote Speeches

Prof. Buddhima Indraratna
University of Wollongong, Australian Academy of Technological Sciences & Engineering, Australia

"*Railroad Performance with Special Reference to Ballast and Substructure Characteristics*"

Bibliography

Buddhima Indraratna is a Professor of Civil Engineering at University of Wollongong, Australia, and is the Fellow of Australian Academy of Technological Sciences & Engineering. He has pioneered research on both rail geotechnics and road embankments on soft soil in Australian academia since early 1990s. His contributions through research to innovative design and construction practices in rail track engineering and ground improvement, and has made a significant impact worldwide. Over two decades, his research encompasses a wide spectrum of applications from theory to practice, particularly in transportation geomechanics. He has over 500 scholarly publications including more than 200 high-level, peer-reviewed journals, 6 research-based books, 45 invited Keynote papers and Special Guest Lectures. He has developed an international reputation for: [a] conceptualization and design innovation for stabilizing rail and road embankments built over soft foundations; [b] novel analytical techniques and design procedures for high speed rail tracks capturing the role of ballast degradation, track confinement and subgrade deformation; [c] dams and embankment design and associated filtration and drainage; [d] analysis of jointed and porous media and stability implications on transport infrastructure. The above contributions have been instrumental in changing the often conservative industry practices, including revisions to some Australian Standards.

Prof. Mats Berg
KTH Royal Institute of Technology, Sweden

"*Integrated Wheel and Rail Damage Prediction Using Vehicle-Track Dynamic Simulations*"

Bibliography

Mats Berg is since 2003 Professor of Railway Technology at KTH Royal Institute of Technology, Stockholm, Sweden. He leads since 2004 the Division of Rail Vehicles, which is one out of seven divisions within the KTH Railway Group. This group has collaborated closely with railway industry and rail infrastructure managers for more than 25 years, both in research projects and in education and training. His research activities are mainly in the fields of vehicle-track dynamic interaction, longitudinal train dynamics and vehicle energy usage at operation. For more than 20 years work has been carried out at the division on prediction of successive wheel and rail wear and in the latest decade also on the damage mode of rolling contact fatigue. In total Mats Berg has been the main advisor for about 10 PhD students and published nearly one hundred papers. Professor Berg is member of the editorial boards of the Journal of Rail and Rapid Transit, the journal of Vehicle System Dynamics and the International Journal of Rail Transportation. In 2009 he hosted and co-chaired the 21st International Symposium on Dynamics of Vehicles on Roads and Tracks (IAVSD´09). Berg is also co-author of the textbooks "Rail Systems and Rail Vehicles" and "Rail Vehicle Dynamics". He is responsible for the KTH course on "Rail Vehicle Technology" and for a number of training courses for the railway industry etc. Mats Berg got a MSc degree in Civil Engineering and a PhD degree in Structural Mechanics, both from Lund University of Technology, Lund, Sweden. He did his postdoc at University of California at Berkeley and was employed for some years at ABB Traction in Västerås, Sweden.

Prof. Wanming Zhai
Southwest Jiaotong University, Academician of Chinese Academy of Sciences, China

"*Technological Challenges in the Development of Chinese High-speed Railways*"

Bibliography

Wanming Zhai is a chair Professor of Railway Engineering at Southwest Jiaotong University, Chengdu, China, and is an Academician of Chinese Academy of Sciences. Since 1994, Dr. Zhai has become a full professor and the Director of Train and Track Research Institute, which affiliated to State Key Laboratory of Traction Power. In 1999, he was appointed Chang Jiang Chair Professor by Chinese Ministry of Education. Currently, he is the Chairman of Academic Committee of Southwest Jiaotong University.

Professor Zhai's research activities are mainly in the field of railway system dynamics, focusing on vehicle-track dynamic interaction and train-track-bridge interactions. He established a new theoretical framework of vehicle-track coupled dynamics and invented new methodologies for solving large-scale train-track-bridge interaction problems. He proposed a method to assess the running safety of high-speed trains passing through bridges at the design stage. His models and methods have been successfully applied to more than 20 large-scale field engineering projects for the railway network in China, mostly for high-speed railways.

Professor Zhai is the Editor-in-Chief of International Journal of Rail Transportation published by Taylor & Francis Group. He also serves as the President of Chengdu Association for Science and Technology, the vice President of the Chinese Society of Theoretical and Applied Mechanics, and the vice President of the Chinese Society for Vibration Engineering.

Prof. Stefano Bruni
Politecnico di Milano, Italy

"*Pantograph-Catenary Interaction: Recent Achievements and Future Research Challenges*"

Bibliography

Stefano Bruni is full professor at Politecnico di Milano, Department of Mechanical Engineering. His scientific work is mainly carried out in the field of dynamics and stability of mechanical systems with applications to Rail vehicle dynamics and train-track interaction, Active control and condition based monitoring in rail vehicles, Pantograph-catenary interaction. He authored approximately 230 scientific papers and spent a large amount of time lecturing and consulting to industry in Italy and other countries. From 2003 to date Prof. Bruni has been group leader for the "Railway dynamics" research group, carrying out research on the dynamic behavior of rail vehicles and their interaction with the infrastructure. Theoretical investigation is backed by the use of top-class experimental facilities, including the boundary layer wind tunnel (1.4MW installed power, $4\times4m^2$ and 14×4 m^2 measuring sections), the full scale "Hardware-in-the-Loop" (HIL) test bench for railway bogies, the bench for rotating bending fatigue on railway axles, the HIL test bench for pantographs and a full-scale test stand to study pantograph-catenary contact in presence of relative movement and electrical current flow. The group, consisting of 10 permanent researchers and several non-permanent researchers and PhD students, was awarded with the maximum evaluation (4.0/4.0, meaning "international excellent") by a panel of international experts in an independent research assessment exercise commissioned by Politecnico di Milano. He is Vice-President of the IAVSD and has been chairman of the IAVSD'05 International conference held in Milano in 2005. He is Editorial Board member for some of the most renowned international journals in the field of Railway Engineering.

Prof. Erol Tutumluer
University of Illinois at Urbana-Champaign (UIUC), USA

"*Field Evaluation of In-Service Railway Ballast Using Machine Vision*"

Bibliography

Dr. Erol Tutumluer is a Professor specializing in Transportation Geotechnics in the Department of Civil and Environmental Engineering (CEE) at the University of Illinois at Urbana-Champaign (UIUC). Professor Tutumluer holds Paul F. Kent Endowed Faculty Scholar and serves as the Director of International Programs. He has research interests and expertise in characterization of pavement and railroad track geomaterials, i.e., subgrade soils and base/ballast unbound aggregates, soil/aggregate stabilization, geosynthetics, modeling granular foundation systems using innovative techniques, sustainable use of foundation geomaterials and construction practices for transportation infrastructure, discrete element analysis of ballast, dynamic response measurement and analyses of track systems, and mechanistic analysis and design. Dr. Tutumluer has served as an investigator on over 65 research projects and graduated 16 PhD and 34 MS students, and authored/co-authored over 280 peer reviewed publications. He is the Co-Editor-in-Chief of the new Transportation Geotechnics Elsevier journal and he is the Chair of the ISSMGE Technical Committee 202 on Transportation Geotechnics. He is a member of the AREMA Committee 1 on Ballast and served as the Chair of the ASCE Geo-Institute's Pavements Committee in 2006-2012. Dr. Tutumluer is an active affiliate of the Transportation Research Board (TRB) and serves as the Chair of TRB's AFP00 Geological and Geoenvironmental Engineering Section. He served as the Chair of TRB's AFP70 Aggregates Committee in 2011-2016 and is a member of the AFS70 Geosynthetics Committee. He was the 2000 recipient of the TRB's Fred Burgraff award for Excellence in Transportation Research; he also received TRB's Geotechnology Section Best Paper Awards in 2009, 2012 and 2016. He was selected and honored with Yangtze River Scholar Award by China Ministry of Education in 2016.

Prof. David Thompson
University of Southampton, UK

"*Modelling of Train-Induced Ground Vibration: a Review of Recent Research*"

Bibliography

David Thompson is Professor of Railway Noise and Vibration in the Institute of Sound and Vibration Research at the University of Southampton. His research covers all aspects of railway noise and vibration including rolling noise, curve squeal, bridge noise, ground vibration and aerodynamic noise. He is author of the TWINS model for rolling noise, used by many railways and manufacturers. He has supervised 30 PhD students to completion and has published 140 journal papers, over 200 conference papers and 8 book chapters. His book Railway Noise and Vibration: Mechanisms, Modelling and Means of Control was published by Elsevier in 2008 and was published in Chinese in 2014. He is on the editorial board of the Journal of Rail and Rapid Transit, Applied Acoustics and the International Journal of Rail Transportation.

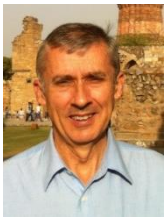
He graduated in mathematics from the University of Cambridge and obtained his PhD from Southampton. He previously worked at British Rail Research and at TNO in the Netherlands and is a Fellow of the Institution of Mechanical Engineers and the Institute of Acoustics in the UK.

Prof. Yoshihiro Suda
The University of Tokyo, Japan

"*Challenge to Improve Curving Performance of Rail Vehicles – from Steering Truck to New Concept Using Independent Rotating Wheelset*"

Bibliography

Yoshihiro SUDA is Professor of Institute of Industrial Science (IIS), The University of Tokyo, Japan. He is Director of Advanced Mobility Research Center and Chiba Experiment of Station of IIS, The University of Tokyo. He is charged to Graduate school of Mechanical Engineering and Interfaculty Initiative in Information Studies of the University of Tokyo, and is Guest Professor of Tongji University and Yanshan University at China. His research area is multibody dynamics, advance control engineering, human-machine interface, and their applications to not only railway vehicles system but also automobile and new generation mobility. He has conducted many industry-academia collaborative projects with railway operator and rolling stock manufactures, and developed many practical realization outputs of research. His researches are made by theoretical study and experiment using his test facilities of scaled and real scale test track at Chiba Experiment Station. He is a board member of Railway Technical Research Institute of Japan, and charged committee member of Japanese Governments. He hosted international conferences such as the 5th International Conference of Contact Mechanics and Wear of Rail/Wheel (CM2000), the 3rd Asian Conference on Multibody Dynamics (ACMD2006), the 10th International Conference on Motion and Vibration Control (MOVIC2010), and 7th International Symposium on Speed-up and Sustainable Technology for Railway and Maglev Systems (STECH2015), and he is a board member of IAVSD.



Prof. Colin Cole
Central Queensland University, Australia

"*Perspectives, Innovations and Developments in Heavy Haul Train Dynamics*"

Bibliography

Professor Colin Cole is the Director of the Centre for Railway Engineering (CRE), a position he has held since 2008.

His work history includes over 28 years in railway engineering and research starting in 1984 in Queensland Railways. He has worked in railway research for the past 23 years and this PhD thesis completed in 1999 was on Longitudinal Train Dynamics. He has undertaken over 20 rail research projects related to train dynamics, simulation, and development of on-board intelligent systems and devices to improve operational safety and maintenance monitoring. He has published over 100 technical papers, 2 books, 2 book chapters and 2 patents. He has also produced over 200 confidential commercial research and consulting reports.

His current research involvements include longitudinal train dynamics and simulations, locomotive traction, alternative energy systems for locomotives and developing new economical systems for condition monitoring and condition/predictive based maintenance systems. He has a particular interest in the study and modelling of non-linear train dynamics and optimisation of heavy haul train components and systems.

His research interests have always included a strong aspect of application and innovation and he has managed several projects that have been successful in gaining government and industry stakeholder support to take the invention through to near market development stages.

He graduated in mathematics from the University of Cambridge and obtained his PhD from Southampton. He previously worked at British Rail Research and at TNO in the Netherlands and is a Fellow of the Institution of Mechanical Engineers and the Institute of Acoustics in the UK.

Prof. Simon Iwnicki
Institute of Railway Research, University of Huddersfield, UK

"*Railway Vehicle - Track Interaction: Recent Advances and a Vision for the Future*"

Bibliography

Simon Iwnicki is Professor of Railway Engineering at the University of Huddersfield in the UK where he is Director of the Institute of Railway Research (IRR). The IRR has an international reputation for excellent research and support to industry in the core area of railway vehicle dynamics modelling, wheel-rail interface engineering and vehicle-track interaction.

Professor Iwnicki's main research activities are in the field of wheel-rail contact and computer modelling of railway vehicle suspensions. He has been working in this area for over 25 years and has built up a substantial reputation for this work, providing not only valuable practical solutions to specific problems in the industry, but making significant contributions to the understanding of some of the fundamental mechanisms of the wheel-rail interaction on which the safe and economical operation of railways depends.

Professor Iwnicki is Editor in Chief of Part F of the Proceedings of the Institution of Mechanical Engineers (the Journal of Rail and Rapid Transit) and Co-Editor (responsible for railway matters) of the journal Vehicle System Dynamics. He has over 100 publications including the 'Handbook of Railway Vehicle Dynamics'.

Technical Program

DAT 0: Sunday July 9, 2017	
9:00-23:00	**Registration** at hotel lobby (Wufu Building)
18:00-19:30	**Reception** at Phuket Restaurant(普吉岛餐厅)　1F, Wangjiang Club

DAT 1: Monday July 10, 2017		
8:00-17:00	**Registration** at hotel lobby　(Wufu Building)	
8:30-9:00	**Opening Ceremony**	**Prof. Wanming Zhai** Wufu Hall(五福堂)
9:00-9:45	**Plenary Keynote Speech**: Railroad Performance with Special Reference to Ballast and Substructure Characteristics ***Prof. Buddhima Indraratna***	**Prof. Simon Iwnicki** Wufu Hall(五福堂)
9:45-10:20	**Plenary Keynote Speech**: Integrated Wheel and Rail Damage Prediction Using Vehicle-Track Dynamic Simulations ***Prof. Mats Berg***	
10:20-10:50	Group Photo and Coffee Break	
10:50-11:25	**Plenary Keynote Speech**: Technological Challenges in the Development of Chinese High-speed Railways ***Prof. Wanming Zhai***	**Prof. Hans True** Wufu Hall(五福堂)
11:25-12:00	**Plenary Keynote Speech**: Pantograph-Catenary Interaction: Recent Achievements and Future Research Challenges ***Prof. Stefano Bruni***	
12:00-13:30	Lunch Break at Songtao Restaurant(松涛餐厅)　1F, Wufu Building	

	Session 1-1 **Railway Vehicle 1**	**Session 2-1** **Railway Track 1**	**Session 3-1** **Railway Induced Environmental Vibration and Noise 1**	**Session 4-1** **Electrification, Communication and Control**
Room	**International Conference Hall** 国际会议厅(2F, Wufu Building)	**Sentosa Hall** 圣淘沙会议厅(4F, Wangjiang Club)	**Boya Hall** 博雅厅(1F, Wufu Building)	**Brumei Darussalam Hall** 文莱厅(2F, Wangjiang Club)
Chairman	Dr. Oldrich Polach	Prof. Zhiwu Yu	Prof. Xiaozhen Sheng	Prof. Shibin Gao
14:00-14:25 (Invited)	**#91:** Why is it so difficult to determine the lateral Position of the Rails by a Measurement of the Motion of an Axle on a moving Vehicle? *Hans True, Lasse Engbo Christiansen*	**#142:** Modeling and Verification of Dynamic Interacted System of High-speed Train-CRTS II Ballastless Track Slab-Foundation based on Beijing-Shanghai High-speed Railway *Lu Sun, Yufen Duan , Peipei Gao, Lei Zhao, Xin Yang, Rui Tang, Jie Zhou*	**#59:** A Hybrid Numerical-experimental Assessment of Railway Ground Vibration in Urban Area *Georges Kouroussis, Konstantinos E. Vogiatzis, David P. Connolly*	**#182:** The Energy Distribution Analysis of Traction Power Supply System Based on MATLAB/Simulink *Wenjing Wei, Haitao Hu, Ke Wang, Zhengyou He*
14:25-14:40	**#363:** An Investigation on Wheel/Rail Impact Dynamics with Three Dimensional Flat Model *Zunsong Ren*	**#121-2:** 3D Numerical Simulations for Response and Performance Prediction of Railway Composite Track Slabs under Derailments *Yikai Wang, Sakdirat Kaewunruen, Marios Theofanous, Olivia Mirza*	**#55-1:** Low-Frequency Sound Radiated from Concrete Bridges: Experimental Comparisons between Two Typical Bridge Types *Xun Zhang, Zhipeng Wen, Yu Zhao, Xiaozhen Li*	**#36:** Analysis on Transmission Characteristic of Integrated Track Circuit in Station *Zicheng Wang, Yadong Zhang, Jin Guo, Ningxian Sun*
14:40-14:55	**#214:** Estimation of Wheel-Rail Friction at Vehicle Certification Measurements *Márton Pálinkó, Mats Berg, Lars Ersson*	**#253:** Effect of Uneven Piers Settlement on Dynamic Responses of Train-Longitudinal Connected Slab Track-Bridge System *Jun Duan, Qingyuan Xu, Ping Lou, Zucai Xiao, Ze Zhang*	**#98:** Test and Analysis of Train-Induced Vibration Comfort of Railway Station Structure *Dubei Feng, Zhixiang Yu, Hu Xu, Jizhong Yang*	**#76:** Examining Liberalization of Iranian Railway Communication Services *Ahmad Khodaee, Maziar Yazdani, Fatemeh Hajizadeh*
14:55-15:10	**#67:** Verification and Validation of Simulations for Rail Vehicle Certification *Gernoth Goetz, Oldrich Polach*	**#74:** Influence of the Preload on Vibration Reduction Effect of Floating Slab Tracks *Minghang Li, Meng Ma, Weining Liu*	**#85:** Ground and Track Vibrations Induced by Two Identical High-Speed Trains Passing Each Other *Gong Cheng, Ping Lu, Qingsong Feng, Xiaozhen Sheng*	**#181:** Energy Consumption Analysis of High-speed Train Based on Traction Calculation *Cai Chen, Haitao Hu, Ke Wang, Zhengyou He*

15:10-15:25	**#154:** Centrifugal Force Definition in Flexible Body Dynamics *Huailong Shi, Pingbo Wu*	**#66:** Study on Dynamic Response of Curved Track Subjected to Harmonic Loads Based on Periodic Structure Theory *Weifeng Liu, Linlin Du, Longxiang Ma, Weining Liu*	**#144-2:** Comparison of 2.5D and 3D Approaches to Model Soil and Structure Borne Vibration *Brice Nelain, Emanuel Reynaud, Nicolas Vincent, Philippe Jean*	**#47-1**: Theory and Practice of China's Railway Electrification in The "Belt and Road" *Li Jian, Mohsen Maaleky*
15:25-15:40	**#126:** Fuzzy Pattern Identification of the Rigid-body Mode of Railway Vehicle Based on Fuzzy Mathematics *Dilai Chen, Gang Shen*	**#84:** The Vertical Vibration Characters Analysis of CWR with Temperature Stress by Using the Wave Number Finite Element Method for Periodical Structure *Qingsong Feng, Wei Wang, Xiaozhen Sheng, Qingjie Liu, Xiaoyan Lei*	**#242:** Deformation Response of Metro Tunnels to Adjacent Tram Track Construction *Yao Shan, Shunhua Zhou, Quanmei Gong, Xiaohui Zhang, Sihui Xu*	**#364:** Direct Power Control Method of Traction Converter-Inverter System with a Small DC-Link Capacitor *Al Bayati Mohammed Majeed, Xinglai Ge, Shehar Bano*
15:40-16:00	Coffee Break			
	Session 1-2 **Railway Vehicle 2**	**Session 2-2** **Railway Track 2**	**Session 3-2** **Railway Induced Environmental Vibration and Noise 2**	**Session 4-2** **Transportation & Management**
Room	**International Conference Hall** 国际会议厅(2F, Wufu Building)	**Sentosa Hall** 圣淘沙会议厅(4F, Wangjiang Club)	**Boya Hall** 博雅厅(1F, Wufu Building)	**Brumei Darussalam Hall** 文莱厅(2F, Wangjiang Club)
Chairman	Prof. Colin Cole	Prof. Liang Gao	Prof. Guangtian Shi	Prof. Yinzhen Li
16:00-16:25 (Invited)	**#58:** Advanced Co-Simulation Technique for the Study of Heavy Haul Train and Locomotive Dynamics Behaviour *Maksym Spiryagin, Qing Wu, Yan Quan Sun, Colin Cole, Ingemar Persson*	**#81:** Development of Sliding Slab Track to Reduce Track–Bridge Interaction *Kyoung-Chan Lee, Seung-Yup Jang, Jungwhee Lee*	**#191:** Aerodynamic Noise Generated by Pantograph Knee Joint *Yanan Wang, David Thompson, Zhiwei Hu*	**#121-3:** Uncovering Urban Dynamic Mobility Patterns Influenced by the Socio-technical Impacts of High Speed Rail Investments *Yuwen Yang, Sakdirat Kaewunruen, Joseph M Sussman*

16:25-16:40	**#60-2:** Comparative Study on Simulation and Experiment of Heavy Haul Train Operation *Wei Wei, Yang Hu, Xubao Zhao, Jun Zhang, Yuan Zhang*	**#222:** Force Analysis of CRTS II Slab Track on Long Span Bridge under Damage Conditions *Hao Ge, Gonglian Dai, Wenshuo Liu*	**#57-2:** Influence of Railway Track Slab's Geometry and Dynamic Parameters on Its Sound Radiation Characteristics *Xinwen Yang, Xiaoyun Ma, Jiangang Shen*	**#132:** Analysing Railway Safety with Systems Thinking *Yadong Zhang, Xiaocheng Ge, Wudong Yang, Jin Guo*
16:40-16:55	**#56-3:** Heavy Haul Locomotive Traction Performance under the Implications of In-train Forces *Qing Wu, Maksym Spiryagin, Colin Cole*	**#72:** Interfacial Crack Propagation Between Slab and CA Mortar Layer as Temperature Rise Under Condition of Narrow Juncture Defect *Yanglong Zhong, Liang Gao , Xiaopei Cai, Bowen Hou, Xianheng Zhang*	**#65:** Numerical Study on Noise Reduction of a U-Shaped Rail Transit Bridge *Xiaodong Song, Qi Li, Dingjun Wu*	**#285:** Radar-Based Safety Protection System for Railroad Staff *Junting Lin, Ruihong Zhou,Yongzhi Min*
16:55-17:10	**#169:** Dynamic Performance of Articulated Freight Wagon Subjected to Coupler Compressive Force *Pengfei Liu, Kaiyun Wang, Tianlong Wang*	**#95:** Analysis of Expansion-Contraction Force and Displacement for CRTS I Type Ballastless Track on Simply Supported Bridge *Pengfei Zhang, Hao Gui, Liang Gao, Xiaoyan Lei, Qiping Hu*	**#78:** A Wheel-Track-Bridge Interaction Model for the Prediction of Noise From Concrete Viaducts *Ke Wang, Qi Li*	**#360:** Algorithm for Running Diagram Preparation of Maglev Train *Mohamed Alhossein, Qiyuan Peng, Malik Muneeb Abid*
17:10-17:25	**#49:** A Signal-based Fault Detection and Classification Method for Heavy Haul Wagons *Chunsheng Li, Shihui Luo, Colin Cole, Maksym Spiryagin, Yanquan Sun*	**#118:** Strain Amplitude Dependent Cyclic Plastic Model for U75VG Rail Steel *Tao Fang, Qianhua Kan, Yilin Fan, Hua Guo, Yuan Wang, Guozheng Kang, Wenyi Yan*	**#93:** BEM Study of the Influence of the Operation Orientations around a Pantograph *Yadong Zhang, Jiye Zhang, Jie Luo*	
17:25-17:40	**#162-1:** The Connected Wagon - A Concept for the Integration of Vehicle Side Sensors and Actors with Cyber Physical Representation for Condition Based Maintenance *Parham Shahidi, Raphael Pfaff, Manfred Enning*	**#290-1:** Railway Fastener Detection Method Based on 3D Images *Xiangxing Dai, Yi Peng, Kelvin C.P. Wang, Enhui Yang, Josh Q. Li, Shihai Ding*	**#131:** Curve Squeal for a Tramway Wheel with Both Falling and Constant Friction *Bo Ding, Giacomo Squicciarini, David Thompson*	

17:40-17:55	**#123:** Practical Modelling and Simulation of Polymer Draft Gear Connections *Colin Cole, Maksym Spiryagin, Qing Wu, Chris Bosomworth*	**#121-4:** Creep and Shrinkage Effects on Railway Prestressed Concrete Sleepers *Dan Li, Sakdirat Kaewunruen, Peter Robery, Alex M Remennikov*	**#150:** Vibration Characteristics of a Semi-Enclosed Sound Barrier Installed on High-Speed Railway Bridges: Field Test and Numerical Modelling *Xiaozhen Li, Yunke Luo, Xun Zhang, Dewang Yang And Zheng Zhou*	
17:55-18:10		**#63**: Dynamic Testing of Tracks and Track Sites before and after Construction, after Damage and after Repair *Lutz Auersch, Samir Said*	**#55-2:** Experimental Study on Time-Frequency Characteristics of Box-Girder Vibrations and Associated Noise during Train Passbys *Xun Zhang, Yu Zhao, Zhipeng Wen, Xiaozhen Li*	
18:15-19:30	Dinner Buffet at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			

DAT 2: Tuesday July 11, 2017				
	Session 1-3 **Railway Vehicle 3**	**Session 2-3** **Railway Track 3**	**Session 3-3** **Catenary System**	**Session 4-3** **Railway Bridge**
Room	**International Conference Hall** 国际会议厅(2F, Wufu Building)	**Sentosa Hall** 圣淘沙会议厅(4F, Wangjiang Club)	**Boya Hall** 博雅厅(1F, Wufu Building)	**Brumei Darussalam Hall** 文莱厅(2F, Wangjiang Club)
Chairman	Prof. Stefano Bruni	Prof. Gang Shen	Prof. Sebastian Stichel	Prof. Xiaozhen LI
8:30-8:55 (Invited)	**#146:** Active Wheelset Control – Actuator Dynamics and Power Requirements *Lushan Weerasooriya, T X Mei*	**#239:** Full Scale Laboratory Testing of Pressure Distribution under a Steel Crosstie *Weimin Song, Baoshan Hunang, Xiang Shu*	**#149:** Five Years of Contact Force Measurements Along the Dovrebanen Railway Line: Statistical Analysis of the Dynamic Interaction *Anders Rønnquist, Petter Nåvik*	**#97-2:** Dynamic Simulation and Analysis of Railway Bridges under Derailed Trains *Liang Ling, Manicka Dhanasekar, David Thambiratnam*
8:55-9:10	**#141:** Active Lateral and Active Wheelset Steering Interference *Alireza Qazizadeh, Sebastian Stichel*	**#54:** Cumulative Deformation Characteristic and Shakedown Limit of Railway Ballast under Cyclic Loading *Junhua Xiao, De Zhang, Yanhai Wang, Xiao Zhang*	**#37:** Numerical Study on the Dynamic Behaviour of Railway Catenary Overlap Section for Higher Speed *Zhendong Liu, Sebastian Stichel, Anders Rønnquist*	**#68:** The Study on Vibration Transmissibility of Track-Box Girder System *Kun Luo, Xiaoyan Lei, Shaohui Zeng*
9:10-9:25	**#196:** Maglev System Control Algorithm and the Related Dynamic Analysis *Keren Wang, Shihui Luo, Jiye Zhang, Weihua Ma*	**#121-1:** Performance and Durability of Concrete Structures in Railway Environment under Extreme Climate *Lei Wu, Sakdirat Kaewunruen*	**#113:** Automatic Visual Inspection for Catenary on High-speed Railways *Yanguo Wang, Wei Zhou, Dapeng Xie, Yi Zhang, Wenxuan Zhang, Luping Han, Xiantang Xue*	**#226:** Prediction Error in Strain Response in Finite Element Simulations with Moving Load Formulation of Train Passages of Open Deck Steel Bridges *Gunnstein T. Frøseth, Anders Rönnquist, Ole Øiseth*

9:25-9:40	**#90-1:** Innovative Model for the Efficiency Optimization for High-Speed Trains through the Recovery of Braking Energy *Elisa Butini, Amedeo Frilli, Enrico Meli, Daniele Nocciolini, Simone Panconi, Luca Pugi, Andrea Rindi, Benedetta Romani*	**#268:** Cyclic Fatigue Life Prediction Modeling in Railroad Bolt *Hasan Keshavarzian, Rahim Afshar*	**#140:** What Happens at 6-7 Hz in the Dynamic Response of Railway Catenary Systems? *Petter Nåvik, Anders Rønnquist*	**#257:** Study on Permissible Value of Vertical Rotation Angle at Girder End of Ballastless Bridge with Transition Plate *Zhihui Zhou, Yinan Chen, Xing Zhang, Like Lin, Xuhui He*
9:40-9:55	**#174:** Power Regeneration in The Primary Suspension of a Railway Vehicle *Ruichen Wang, David Crosbee, Simon Iwnicki, Yunshi Zhao, Adam Bevan*	**#355:** Research of Coordinate Extraction and Curve Realignment Algorithm Based on Continuous Point Cloud Data *Feng Han, Xiaofeng Duan, Ye Zhang*	**#96:** Numerical Simulation and Nonlinear Analysis for Galloping of Electrified Railway Catenary *Yang Song, Zhigang Liu, Jing Zhang, Fuchuan Duan*	**#207-2:** Research on the Limit Value of Vertical Basic Frequency of Simply Supported Beam with 400 km/h *Xiaowei Qiu, Dejun Liu, Xiaozhen Li, Xiaodong Song*
9:55-10:10		**#274-2:** Analytical Model of Ballasted Track Bridge Approach Validated with Field Measurements *Wenting Hou, Erol Tutumluer, Hai Huang, Huseyin Boler, Debakanta Mishra*		
10:10-10:30	Coffee Break			
	Session 1-4 **Railway Vehicle 4**	**Session 2-4** **Railway Subgrade**	**Session 3-4** **Wheel/Rail Contact 1**	**Session 4-4** **Vehicle-Track-Bridge Interaction 1**
Room	**International Conference Hall** 国际会议厅(2F, Wufu Building)	**Sentosa Hall** 圣淘沙会议厅(4F, Wangjiang Club)	**Boya Hall** 博雅厅(1F, Wufu Building)	**Brumei Darussalam Hall** 文莱厅(2F, Wangjiang Club)
Chairman	Prof. Andrea Rindi	Prof. Erol Tutumluer	Prof. Xuesong Jin	Prof. Xuhui He
10:30-10:55 (Invited)	**#129:** A Time Domain Model for the Study of High Frequency Wheelset-Track Interaction *Wenshan Fang, Bruni Stefano*	**#64:** Strengthening Technology of Existing Infrastructure under 30 ton Axle Load Hopper Car in ShuoHuang Railway *Geming Zhang, Zhanguo Ma, Yonghua Su, Feng Chen, Luchao Qie*	**#148:** Experimental Observation of the Temperature Influence on Wheel/Rail Adhesion under Wet Conditions *Hua Chen, Hiraku Tanimoto*	**#265:** Review on Evaluation Criteria for Vehicle-Bridge Coupled System *Nan Zhang*

10:55-11:10	**#231:** Mathematical Modelling of a Full-Scale Roller Rig to Improve Predictions of Vehicle Curving Behaviour *Yunshi Zhao, Simon Iwnicki, Paul Allen, Philip Shackleton*	**#362:** Deformation and Degradation Response of Railway Ballast under Impact Loading – Effect of Artificial Inclusions *Fernanda Ferreira, Buddhima Indraratna*	**#88:** Prediction of RCF Damage on Underground Metro Lines *Pelin Boyacioglu, Adam Bevan, Andy Vickerstaff*	**#48-2:** A Hybrid Solution for Studying Vibrations of Coupled Train-Track-Bridge System *Zhihui Zhu, Wei Gong, Lidong Wang, Issam E. Harik, Yu Bai*
11:10-11:25	**#128:** Dynamic Analysis of a Full-Scale Locomotive-Roller Rig Coupled System *Binbin Liu, Edoardo Sabbioni, Stefano Bruni*	**#305:** Water Inflow Calculating Method and Grouting Parameters Analysis after Considering the Velocity of Groundwater *Pan Cheng, Qigao Hu, Linxuan Zhou, Liang Li, Lianheng Zhao, Chang Liu, Yang Song*	**#127-1:** Tribological Behaviour of Laser Cladded Rail under Rolling Contact Test *Taposh Roy, Ralph Abrahams, Quan Lai, Peter Mutton, Mehdi Soodi, Anna Paradowska, Wenyi Yan*	**#250:** Finite Element Model Updating of the Ballastless Track: An Application in the Dynamic Study of Vehicle-Track-Bridge System *Yulong Bao, Yongle Li, Huoyue Xiang*
11:25-11:40	**#277:** The Dynamic Analysis of a Freight Train Rolling Bearing with Outer Ring Fault *Wenchang Zhang, Yongqiang Liu, Yingying Liao, Pengfei Liu*	**#144-1:** Soil dynamic characterization using practical MASW and SASW *Loïc Grau, Walid Wasmine, Denis Bozzetto, Brice Nelain, Emanuel Reynaud, Nicolas Vincent*	**#90-5:** Efficient Wheel-Rail Contact Model for the On-Line Estimation of Contact Forces *José Escalona, Emanuele Galardi, Enrico Meli, Andrea Rindi, Benedetta Romani*	**#107:** The Running Safety of High-Speed Railway Simply-Supported Bridges Subjected to Near-Fault Ground Motions *Lifeng Xin, Xiaozhen Li, Xin Jin, Lin Xiao*
11:40-11:55	**#240:** Condition Monitoring of Rail Vehicle Suspension System by Model-based Assessment *Xiaoyuan Liu, Stefano Bruni*	**#294:** Surficial Stability of Soil Slope Protected by Frame Structure of Mortar Rubble *Jifeng Lian, Qiang Luo*	**#188:** Method Verification for Wheel-Rail Contact Force Continuous Testing by Using Reduced Scale Model *Qingjie Liu, Xiaoyan Lei, Maotang Sun, Hui Huang*	**#263-1:**Effects of CRTS II Slab Ballastless Track on the Seismic Responses of a High-speed Railway Continuous Girder Bridge *Biao Wei, Peng Wang, Lizhong Jiang, And Xuhui He*
11:55-12:10	**#280:** An Improved Resonance Demodulation Method Based on EMD De-Noising and Typical Kurtogram *Wenpeng Liu, Yongqiang Liu, Shaopu Yang, Yingying Liao*	**#361:** Existing Railroads on Shrink-swell Soils: Field Monitoring, Laboratory Tests and Numerical Simulation *Dong Wang, Marcelo Sánchez, Jean-Louis Briaud*	**#162-2:** Modelling of the Effect of Sanding on the Wheel-Rail Adhesion Area *Raphael Pfaff, Amir Moshiri, Alexander Reich, Markus Gäbel*	**#299:** Influence of Sleeper Passing Frequency on Short Span Bridges – Validation against Measured Results *Therese Arvidsson, Abbas Zangeneh, Daniel Cantero, Andreas Andersson*

12:10-12:25	**#189:** Train Induced Vibrations in Crossings; Correlation between Wayside and Train-borne Measurements *M.A. Boogaard, Z. Li, R.P.B.J. Dollevoet*	**#270:** A Study on Dynamic Behavior of Pile-Supported Slab Track on Soft Soil *Mintaek Yoo, Mincheol Baek, Jinsun Lee, Ilwha Lee*	**#82:** A Study on the Development of a Model for Predicting Worn Profile of Rail Using Multibody Dynamics *Masahiro Tsujie, Ariku Yoshioka, Yuki Mizutani , Yoshiaki Terumichi*	
12:30-13:30	Lunch Break at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			
	Session 1-5 **Railway Vehicle 5**	**Session 2-5** **Railway Inspection and Maintenance 1**	**Session 3-5** **Wheel/Rail Contact 2**	**Session 4-5** **Vehicle-Track-Bridge Interaction 2**
Room	**International Conference Hall** 国际会议厅(2F, Wufu Building)	**Sentosa Hall** 圣淘沙会议厅(4F, Wangjiang Club)	**Boya Hall** 博雅厅(1F, Wufu Building)	**Brumei Darussalam Hall** 文莱厅(2F, Wangjiang Club)
Chairman	Prof. Yoshihiro SUDA	Prof. Yujin Lim	Prof. Zili Li	Prof. Nan Zhang
14:00-14:25 (Invited)	**#172:** Methods of simulation of railway wheelset dynamics taking into account elasticity *Gennady Mikheev, Dmitry Pogorelov, Alexander Rodikov*	**#100:** Use of Laser Ultrasonics for Rail Flaw Detection – an Insight into Preliminary Experiments *Alahakoon S, Pathak M, Sun YQ, Spiryagin M, Cole C*	**#90-2:** An Efficient Wheel-Rail Conformal Contact Model for Multibody Simulation *Elisa Butini, Amedeo Frilli, Lorenzo Marini, Enrico Meli, Simone Panconi, Andrea Rindi, Benedetta Romani*	**#246:** Application of Probability Density Evolution Theory on the Random Dynamic Analysis of Train-Bridge System in High Speed Railway *Jianfeng Mao, Zhiwu Yu, Lizhong Jiang, Xuhui He*
14:25-14:40	**#56-2:** System Dynamics of Distributed-Power Train under Failed Brake Communication *Qing Wu, Wei Wei, Bin Ji, Weihua Ma*	**#127-2:** Laser Cladding for Railway Repair: Influence of Depositing Materials and Heat Treatment on Microstructural Characteristics *Quan Lai, Ralph Abrahams, Peter Mutton, Cong Qiu, Anna Paradowska, Mehdi Soodi, Taposh Roy, Wenyi Yan*	**#171:** Data Analytics for the Study of RCF Damages on the Dutch High Speed Line *Ricks Schalk, Alfredo Nunez Vicencio, Arjen Zoeteman, Rogier Wolfert*	**#241:** Analysis of the Dynamic Response of Train–Track-Bridge Coupled System on Curve Based on Inter-System Iteration Method *Jin Shi, Nan Zhang, Yingjie Wang*

14:40-14:55	**#198:** Study on the Dynamics Behaviour and MBS Modeling Method of a Subway Track Detecting Vehicle *Zhuang Qi, Wenlian Zhang, Pengfei Liu, Qiang Lei*	**#309:** Early Detection of Track Substructure Damage *Kurt T. Rudahl, Sally E. Goldin, Warat Kongkikul*	**#111:** Comparison and Verification of Vertical Wheel-rail Contact Models *Jingjing Yang, Nan Zhang, Jiao Meng*	**#119:** Coupling Vibration Analysis of Low-Medium Speed Maglev Train and At-Ground Structure *Dangxiong Wang, Xiaozhen Li, Xun Zhang*
14:55-15:10	**#215:** Analysis of Flat Wheel Based on Finite Element Method *Xujing Zhang，Qingjie Liu，Xiaoyan Lei，Tian Yang，Wei Cheng*	**#190:** Laser Based Inspection and Monitoring of Rails - A Finite Element Analysis *Madhuri Pathak, Sanath Alahakoon, Yan Quan Sun, Maksym Spiryagin , Colin Cole*	**#120:** The "Low Adhesion" Problem – The Influence of Friction Modifier Composition on Adhesion and Film Formation in Wheel-Rail Contact *Radovan Galas, Milan Omasta, Ivan Krupka, Martin Hartl*	**#259:** An Analytical Formulation of the Railway Vehicles-Bridge Interactions Using a Generalized Beam Element with Moving Mass *Ying Wen, Rui Tao*
15:10-15:25	**#212:** The Numerical Simulation of Aerodynamic Characteristics of the High-speed Train on the Ground *Xiaozhen Li, Ming Wang, Jun Xiao, Dejun Liu*	**#232:** Modelling Railway Track Maintenance Using Markov Decision Process *Siddhartha Sharma, Yu Cui, Qing He, Zhiguo Li*	**#133:** Flat-induced wheel-rail impact response under thermo-mechanical loading *Liangliang Han, Lin Jing*	**#165:** Dynamic Analysis Model and Verification of Coupling Low-Speed Maglev Train – Rail Beam *Xiaozhen Li, Xin Jin, Qinye Hong, Dejun Liu*
15:25-15:40	**#136:** Analysis of the Train Surface Pressure Generated by a High-Speed Train Passing Through Tunnels with Different Lengths *Jie Luo, Jiye Zhang, Liang Zhang, Yadong Zhang*	**#101:** Experimental Investigation into the use of Thermography for the Detection of Rail Foot Flaws *Chris Bosomworth, Yan Quan Sun, Maksym Spiryagin, Sanath Alahakoon , Colin Cole*	**#94:** A 3D Finite Element Solution of Coupled Vehicle-Track Contact Frictional Rolling on Short Pitch Corrugation *Rolf Dollevoet, Shaoguang Li, Zili Li*	**#117:** Dynamic Analysis of Vehicle-track-bridge Systems Subjected to Track Alignment *Xuyou Long, Jin Shi, Yingjie Wang*
15:40-16:00	Coffee Break			

	Session 1-6 Train-track interaction	Session 2-6 Railway Inspection and Maintenance 2	Session 3-6 Wheel/Rail Contact 3	Session 4-6 Vehicle-Track-Bridge Interaction 3
Room	**International Conference Hall** 国际会议厅(2F, Wufu Building)	**Sentosa Hall** 圣淘沙会议厅(4F, Wangjiang Club)	**Boya Hall** 博雅厅(1F, Wufu Building)	**Brumei Darussalam Hall** 文莱厅(2F, Wangjiang Club)
Chairman	Prof. Mats Berg	Prof. Lu Sun	Dr. Hua Chen	Prof. Yongle Li
16:00-16:25 (Invited)	**#365:** Vehicle Track System Qualification *Yujiang Zhang*	**#292:** Integrating Automated Analyses of Track Defect Data with Track Inspection and Maintenance Scheduling *John F. Betak, Trefor P. Williams*	**#233:** A Nonlinear Wheel-Rail Contact Model for a Train-Structure Interaction Methodology: Formulation and Validation *Pedro Montenegro, Rui Calçada*	**#27:** Simulation of the Train-Bridge Vibration under Wind Loads Using a Rigid-Flexible Coupling Method *Xuhui He, Yongbin Gai, Liya Liu, Yunfeng Zou, Haiquan Jing, Teng Wu*
16:25-16:40	**#293:** A Methodology for Switch and Crossing Optimization *Albert Lau, Chang Wan, Alf Helge Løhren,Inge Hoff*	**#260:** Integrated Intelligent Platform for Life Cycle Management of Track *Deyun Ding, Weidong Cao, Fanhua Li,Bin Shao*	**#153:** Design and Implementation of the Anti-RCF Crack Profile for the Rail in Heavy-Haul Railway *Yu Zhou, Xiaofeng Zheng, Miao Yu, Donghui Bai*	**#109:** Effect of Load Distribution of Rail Structure on the Vehicle Induced Vibration of Railway Bridges *Zhibin Jin, Bo Huang, Yan Zhu, Shizhong Qiang*
16:40-16:55	**#144-3:** Computation of Dynamic Forces Generated by Rail Joints *Nicolas Vincent, Stephane Teppe, Brice Nelain, Emanuel Reynaud, Emmanuel Laurans*	**#186:** Influencing Factors For Condition-Based Maintenance In Railway Tracks Using Knowledge-Based Approach *Ali Jamshidi, Siamak Hajizadeh, Meysam Naeimi, Alfredo Núñez, Zili Li*	**#116:**Computation of Stress Intensity Factors in an Initiating RCF Crack Using a 3D Modelling Approach *Meysam Naeimi, Zili Li, Rolf Dollevoet*	**#264:** Numerical Simulation on Aerodynamic Performance of Vehicle-bridge System Subjected to Cross Wind *Zhiyong Yao, Nan Zhang, He Xia*
16:55-17:10	**#75:** Calculation of Train-Track Interactions Using the Time Domain Moving Green Function *S. Zhang, T. Deng, X. Sheng*	**#352:** Rail Buckle Early Warning Detection Using In-Service Instrumented Revenue Vehicle *Dingyang Zheng, Paul Reichl, Cameron Thompson*	**#237:** Prediction of Wheel/Rail Rolling Contact Wear under the Situation of Wheel/Rail Vibration *Qian Xiao，Chao Chang, Jifeng Zheng, Jiao Fang*	**#110:** An Analytical Approach for Wind Velocity Spectrum of Moving Vehicle Based on the Longitudinal and Lateral Spectrum of Stationary Point *Jun Xiao, Xiao-Zhen Li, De-Jun Liu, Ming Wang, Jin-Feng Wu*

17:10-17:25	**#217:** Development and Validation of a Vertical Vehicle-Track Interaction Model *Martina Meacci, Enrico Meli, Luca Pugi, Andrea Rindi*	**#350:** Tamping Effectiveness Prediction using Supervised Machine Learning Techniques *Chang Wei Tan, Geoffrey I Webb, Francois Petitjean,Paul Reichl*	**#90-3:** A New Wear Model Considering Wheel-Rail Conformal Contact *Elisa Butini, Lorenzo Marini, Enrico Meli, Simone Panconi, Andrea Rindi, Benedetta Romani*	**#245:** Numerical Simulation of Aerodynamic Characteristics of Wind-Vehicle-Bridge System *Simin Zou, Xuhui He, Teng Wu, Yunfeng Zou, Haiquan Jing*
17:25-17:40	**#163:** Modelling of Vertical Vehicle-Track Coupled Dynamics with Parametric Uncertainties Based on Stochastic Galerkin Method *Guoying Tian, Jianmin Gao, Yanhai Xu, Pengyi Deng*	**#155-3:** Rail Defect Diagnosis Using Smartphones: a Feasibility Study *Saba Karimi, Morteza Bagheri*	**#308:** Study on Interface Stress Pulse Characteristics of the Forward Collision between A Rigid Body and Elastic Half Space *Zhihua Lin, Zhiping Zeng, Hong Xie, Bin Wu, Weidong Wang*	
17:40-17:55		**#351:** Small Scale Unmanned Aerial System (UAS) for Railway Culvert and Tunnel Inspection *Chi Hei Vong, Ravi Ravitharan, Paul Reichl, Joshua Chevin, Hoam Chung*	**#147:** The Development of Detailed Track Modelling for Simulation of Rail Wear Due to High Adhesion Traction *Yan Quan Sun, Maksym Spiryagin*	
17:55-18:10			**#152:** Profile Optimization of No. 12 Heavy Haul Railway Fixed Frog with 75kg m^{-1} Rail *Yao Qian, Ping Wang, Boyang An, Rong Chen, Wenbo Li, Jingmang Xu, Qian Su*	
18:30-19:30	Dinner Buffet at Songtao Restaurant(松涛餐厅) 1F, Wufu Building			

DAT 3: Wednesday July 12, 2017		
8:30-9:05	**Plenary Keynote Speech:** Field Evaluation of In-Service Railway Ballast Using Machine Vision ***Prof. Erol Tutumluer***	**Prof. Buddhima Indraratna** Wufu Hall(五福堂)
9:05-9:40	**Plenary Keynote Speech**: Modelling of Train-induced Ground Vibration: a Review of Recent Research ***Prof. David Thompson***	
9:40-10:15	**Plenary Keynote Speech**: Challenge to Improve Curving Performance of Rail Vehicles – from Steering Truck to New Concept Using Independent Rotating wheelset ***Prof. Yoshihiro Suda***	
10:15-10:45	Coffee Break	
10:45-11:20	**Plenary Keynote Speech**: Perspectives, Innovations and Developments in Heavy Haul Train Dynamics ***Prof. Colin Cole***	**Prof. David Thompson** Wufu Hall(五福堂)
11:20-11:55	**Plenary Keynote Speech**: Railway Vehicle - Track Interaction: Recent Advances and a Vision for the Future ***Prof. Simon Iwnicki***	
11:55-12:15	**Closing Ceremony**	**Prof. Kelvin C.P.Wang** Wufu Hall(五福堂)
12:15-12:30	**Awards Ceremony**	**Prof. Wanming Zhai** and **Dr. Robert Stevens** Wufu Hall(五福堂)
12:30-13:30	Lunch Break at Songtao Restaurant(松涛餐厅) 1F, Wufu Building	
14:00-17:00	**Technical Visit**	

TECHNICAL VISIT

An interesting technical visit will be arranged for you. The technical visit is scheduled for the afternoon of Wednesday July 12th and we will take a ride in front of the Wufu Building at 14:00. All the visitors will be divided into two groups to simultaneously visit two laboratories, State Key Laboratory of Traction Power and the laboratory of the digital simulation platform of high-speed train.

The State Key Laboratory of Traction Power (TPL) is a state key open research laboratory which is affiliated to the Chinese Ministry of Education and attached to Southwest Jiaotong University. Preparations were started in 1989 for the construction of TPL. The first-stage construction was finished in 1993 and TPL started to carry out research and tests in 1994. In 1996 TPL was officially approved by the central government and was evaluated as the first-class State Key Laboratory twice in 2003 and 2008 respectively. TPL's objectives are to conduct high level research in both science and technology to meet the demands of China railway modernization, strengthen the fundamental research and its application, and develop leading scholars and experts in the field of railway vehicle systems.

TPL mainly includes the railway vehicle roller-test rig and the comprehensive experiment hall of rail transport and can do the experiments of railway vehicle roller-test, vehicle-track coupled dynamics, derail testing, wheel/rail wear, fatigue life of vehicle, pantagraph-catenary coupled dynamics, riding comfort testing and so on.

Railway vehicle roller-test rig

Comprehensive experiment hall of rail transport

Full-scale multi-functional test platform for track-track system

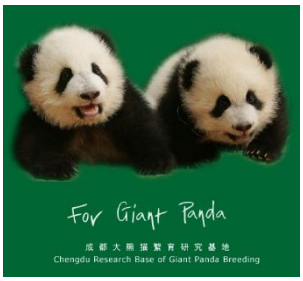
The digital simulation platform of high-speed train is mainly composed of the high-speed train digital simulation system, virtual prototype of high-speed train, the design center of high-speed train, the training center of driving simulation of high-speed train and so on.

It will be an impressive visit. Welcome to visit. If you would like to attend, please confirm during registration and you will get a ride ticket to make it convenient for us to arrange the vehicles.

TOURISM

Sichuan has a long history of 4,500 years civilization until now, it is known as the "land of abundance". From ancient water conservancy project and former town houses to celebrity residence, from temples and stone carvings mural to modern art museum, from prehistoric sites to modern construction style, Sichuan has everything mentioned above. Chengdu which is the tourist center in Sichuan province, has become the most prosperous and modern city in western China. There are many places of interest, some famous sites are listed as follows.

Chengdu Research Base of Giant Panda Breeding

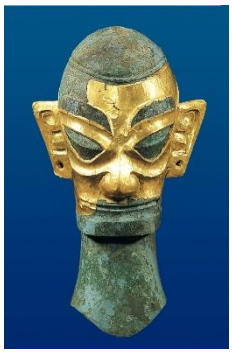


Research Base of Giant Panda Breeding situated on the Axe Hill 10 kilometers north of Chengdu, this 600-acre research station and breeding ground has been in operation since in 1987, opened to the public in early in 1995. 40 plus pandas as well as other endangered species like lesser pandas and black-necked crane currently reside at the base in quarters. There is also a semi-wild breeding area where China's animal ambassadors will be eventually allowed to freely roam. A museum has detailed exhibits on panda evolution, habits, habitats and conservation efforts. It is the most ideal ecological tourism place for visitors all around world to get to know the appearance of giant pandas and to get around the wild nature. It was awarded "Global 500" twice by the UN in the year of 1989 and 1994.




Jinsha Relics Museum / Sanxingdui Ruins

Jinsha Relics Museum is located in the northwest of Chengdu, about 5 km from downtown district. As a theme park-style museum, it is for the protection, research and display of Jinsha relics and archaeological finds. The museum covers 300,000 square meters with a total construction area of approximately 35,000 square meters. It is mainly made up of departments of Relics and Exhibitions and the conservation center. The rest vast areas are for green spaces of thriving trees which really make the museum beautiful and charming. Within the museum park are such leisure and cultural landscapes as Jade Road and Ebony Forest and the like. It is also equipped with complete facilities for the various services. Therefore, you will be feeling refreshed while touring around. Jinsha Relics is the first major archaeological discovery in China in the new millennium and was rated the key reservation unit of the nation.

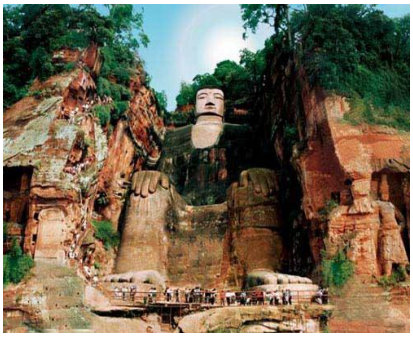


Roused from a slumber over millennia, the Sanxingdui ruins were accidentally discovered in 1929 and the persistent efforts of archaeologists for the past century have brought to light thousands of cultural relics of high scientific and artistic value. These cultural relics are pleasing to both eye and mind, and have helped lift the mysterious veil from the highly developed ancient Shu civilization. Because of this, the Sanxingdui Ruins have been recognized by some specialists as the "site of an ancient culture, an ancient town and an ancient state".

Dujiangyan Dam

The Dujiangyan Dam, 45km north of Chengdu, is an ancient technological wonder of the country. More than 2000 years ago, Li Bing (250-200BC), as a local governor of the Shu State, designed this water control and irrigation dam and organized thousands of local people to complete the project to check the Minjiang River. For many years the river, flooded the Chengdu agricultural area and local farmers suffered a lot from the water disaster. Due to the success of the project, the dam automatically diverts the Minjiang River and channels it into irrigation canals. For many years the dam has continued to make the most of the water conservancy works.

Leshan Giant Buddha—Emei Mountain



The Giant Buddha on the east bank of Minjiang River in Leshan City, Sichuan Province, rests his feet where three rivers: the Minjiang, Qingyi and Dadu join. The Buddha faces Emei Mountain across the river and at its back is the western slope of Lingyun Mountain. Standing at 70.7 meters with shoulders 24 meters wide, it is an impressive sight. A water drainage system reduces erosion by rain and slows weathering. The statue was begun in A.D. 713 and completed in A.D. 803.

Emei Mountain lies 7 km southwest of Emeishan City and is one of the four mountain ranges in China that Buddhists consider sacred. It was included in the UNESCO world heritage list in 1996. The mountain stretches more than 200 kilometers from south to north. Its main peak, Wanfo Top, is 3,099 meters above sea level. Since ancient times Emei Mountain has been described as "Beauty Under Heaven".

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  Found in 1996, established to a stock company in 2001, publicly listed on Shenzhen Stock Exchange in Sep 2010;

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- 国家高新技术企业、四川省和成都市轨道交通产业龙头企业、成都市重点培育的本土领军企业；

  National high-tech enterprise, the leading enterprise of rail transit in Sichuan and Chengdu, leading focusing on cultivating enterprise of Chengdu;

- 先后参与18项国家或行业标准制定，拥有471项专利技术，其中发明专利技术90项；

  A participant of establishing 18 national or industrial standards, with more than 400 patents, including 90 invention patents;

- 公司传统产品广泛应用于我国绝大部分高速铁路、高速公路和世界级桥梁工程，并远销欧洲、亚洲、美洲和非洲等50多个国家和地区，先后获得“全国用户满意产品”、“京沪高铁优秀供应商”、“杭州湾跨海大桥优秀供应商”等殊荣;

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- 公司在天府新区、成都、雅安、上海和白俄罗斯建设了5个专业化的生产基地，分别从事轨道交通装备、路桥功能部件、新能源汽车和超级电容产品的生产制造。

  Setting up 5 professional manufacturing base in Tianfu New section, Chengdu, Ya’ an, Shanghai and Belarus. Respectively engaged in the manufacturing of railway transit equipments, functional components of road and bridge, new energy vehicles and superCap.

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与世界轨道交通一流企业——中车长客合作，四川省和成都市轨道交通产业“一总部两基地”的重要组成部分。

Cooperate with CRCC Changchun Vehicle, the first class enterprise of railway industry. The important part of Sichuan and Chengdu rail transit industry “one headquarter and two base”

悬挂式单轨

Suspended monorail

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自主知识产权100%低地板现代有轨电车(拥有完全知识产权)

Self-developed 100% low floor modern tram（holding all the intellectual property rights）

阿尔斯通100%低地板现代有轨电车(应用于成都蓉二号线)

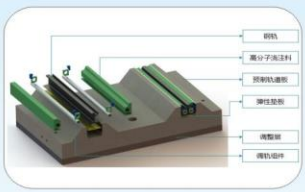
Alston 100% low floor modern tram (applied in Chengdu R2 line)

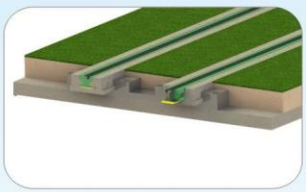
70%低地板现代有轨电车(新津R1线)

70% low floor modern tram (Xinjin R1 line)

B型地铁车辆（应用于成都地铁3号线和4号线）

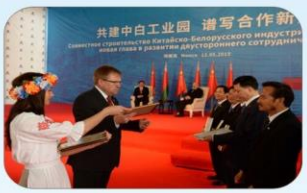
B typed metro (applied in chengdu 3rd and 4th metro line)





自主研发“嵌入式连续支承无砟轨道系统”，填补国内空白，达到国际先进技术水平，在国内城轨领域首家通过了中铁检验认证中心的URCC产品认证。

Self-developed embedded continuous supporting ballastless track system,filled up the domestic blank and reached the international advanced technology level,And the first of the domestic urban rail field to pass the CRCC URCC product certification.



世界领先技术——超级电容，入驻中白工业园，实现“一带一路”走出去。

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“铁路列车-桥梁”耦合振动仿真
Simulation of Railway Train-Bridge Interaction

“铁路列车-轨道-下部结构”耦合振动仿真
Simulation of Railway Train-Track-Substructure Interaction

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Simulation of Vehicle Dynamics with Flexible Wheelsets

考虑轮对弹性的滚动振动试验台模拟
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基于CONTACT的轮轨接触仿真
Simulation of Wheel-Rail Contact with J.J. Kalker's CONTACT Program

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Simulation of Straddle-Type Monorail Train-Track Beam Interaction

悬挂式“单轨列车-轨道梁”耦合振动仿真
Simulation of Suspension-Type Monorail Train-Track Beam Interaction

“公路车辆-桥梁”耦合振动仿真
Simulation of Road Vehicle-Bridge Interaction

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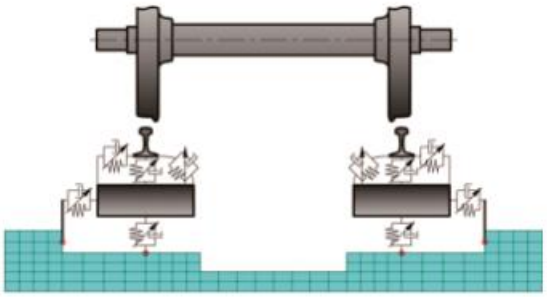

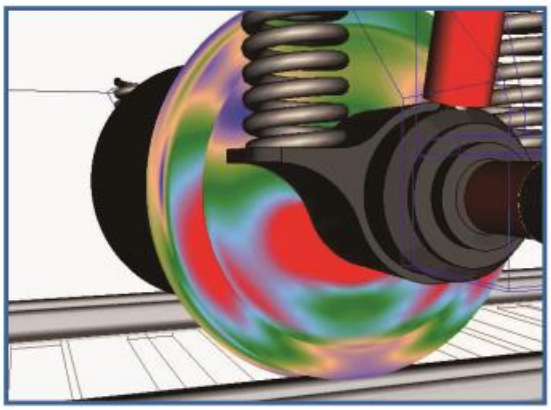

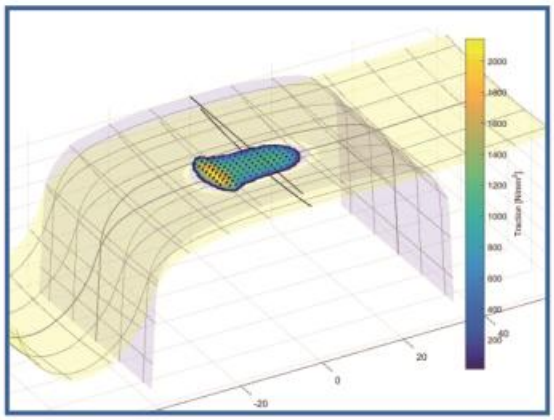

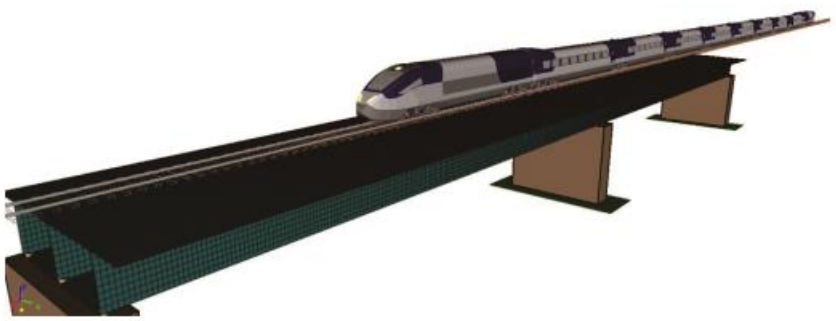

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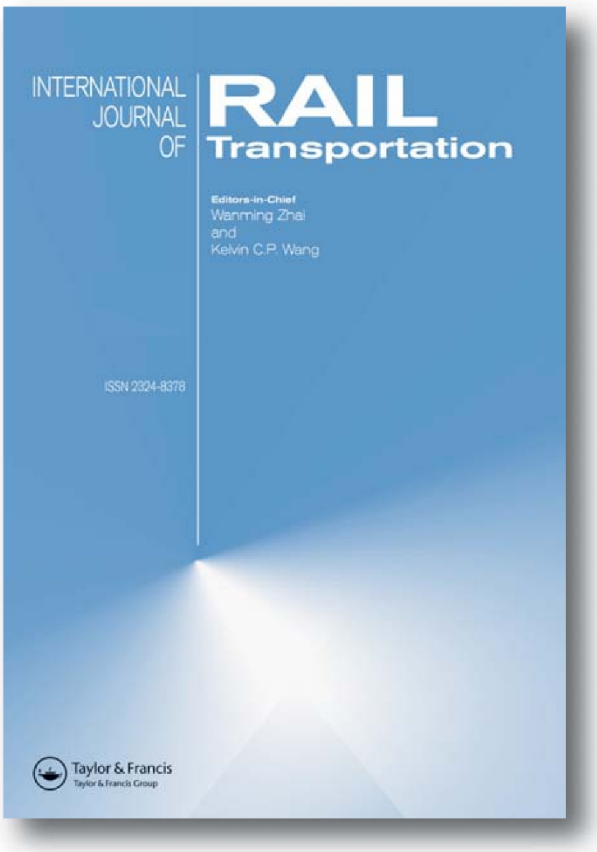

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