

2011

The 1st International Workshop on High-speed
and Intercity Railways (IWHIR 2011)

19 - 22 July 2011

第一屆高速及城際鐵路國際會議

二零一一年七月十九至二十二日

ORGANIZER:

The Hong Kong Polytechnic University, Hong Kong

CO-ORGANIZERS:

Southwest Jiaotong University, China
Beijing Jiaotong University, China
Dalian Jiaotong University, China
China Engineering Consultants, Inc., Taiwan
Zhejiang University, China
Tsinghua University, China



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Conference Schedule Overview

會議日程安排

19 July 2011 (Tuesday), Shenzhen

2011年7月19日(星期二), 深圳

Time 時間	Event 活動內容	Venue 地點
Whole Day 全日	Arrival of participants in Shenzhen 與會者到達深圳	
14:00 - 17:00	Registration 會議報到(註冊)	PolyU Base Building, 18 Yuexing Road, High-tech Industrial Park, Nanshan District, Shenzhen, China 中國深圳市南山區高新科技園粵興一道18號(可沿白石路至白石路與科技南一路交叉口) 香港理工大學產學研大樓

1st Day, 20 July 2011 (Wednesday), Shenzhen

第一日, 2011年7月20日(星期三), 深圳

Time 時間	Event 活動內容	Venue 地點
07:20 - 08:30	Buses from Hotels to Conference Venue & Registration 專車由酒店接送至會場、會議報到	PolyU Base Building, 18 Yuexing Road, High-tech Industrial Park, Nanshan District, Shenzhen, China 中國深圳市南山區高新科技園粵興一道18號(可沿白石路至白石路與科技南一路交叉口) 香港理工大學產學研大樓
08:30 - 09:00	Opening Ceremony 開幕典禮	Room 201, PolyU Base Building, Shenzhen, China 中國深圳市香港理工大學產學研大樓201室
09:00 - 12:10	Keynote/Plenary Speech Sessions 主題報告/全場報告	
12:10 - 13:30	Conference Buffet 會議自助餐	Room 209, PolyU Base Building, Shenzhen, China 中國深圳市香港理工大學產學研大樓209室
13:30 - 17:00	Invited Presentation Sessions 特邀報告	Rooms 201, 303 and 306, PolyU Base Building, Shenzhen, China 中國深圳市香港理工大學產學研大樓201, 303及306室
17:30 - 19:00	Conference Dinner 會議晚餐	Laoshaoxing Restaurant, F/3, Block 2, Financial Base, 8 Kefa Road, Nanshan District, Shenzhen, China 中國深圳市南山區科發路8號金融基地二棟三層老紹興酒樓
19:00 - 21:00	Buses from Restaurant to Hong Kong 專車由酒樓送往香港	

2nd Day, 21 July 2011 (Thursday), Hong Kong

第二日, 2011年7月21日(星期四), 香港

Time 時間	Event 活動內容	Venue 地點
08:00 - 08:30	Registration 會議報到(註冊)	Outside M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學李嘉誠樓 M1603 門外
08:30 - 09:00	Special Guest Speech 特邀嘉賓演講	M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學李嘉誠樓 M1603
09:00 - 12:10	Keynote/Plenary Speech Sessions 主題報告/全場報告	
12:30 - 13:30	Conference Lunch 會議午餐	Staff Club Restaurant, 5/F, Communal Building, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學文康大樓5樓職員會所餐廳
14:00 - 18:00	Plenary Speech Sessions 全場報告	M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學李嘉誠樓 M1603
18:45 - 20:45	Conference Banquet 會議晚宴	The Royal Garden Chinese Restaurant, Palace Room, B1 Level, The Royal Garden, 69 Mody Road, Tsim Sha Tsui East, Kowloon, HK 香港九龍尖沙咀東部麼地道69號帝苑酒店B1層帝苑軒

3rd Day, 22 July 2011 (Friday), Hong Kong

第三日, 2011年7月22日(星期五), 香港

Time 時間	Event 活動內容	Venue 地點
08:00 - 08:30	Registration 會議報到(註冊)	Outside M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學李嘉誠樓 M1603 門外
08:30 - 12:00	Keynote/Plenary Speech Sessions 主題報告/全場報告	M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學李嘉誠樓 M1603
12:30 - 13:30	Conference Lunch 會議午餐	Chinese Restaurant, 4/F, Communal Building, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學文康大樓4樓南北小廚
14:00 - 17:50	Invited Presentation Sessions 特邀報告	N112-N114, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK 香港九龍紅磡香港理工大學N座林百欣演講廳 N112-N114
17:50	End of Conference 會議結束	

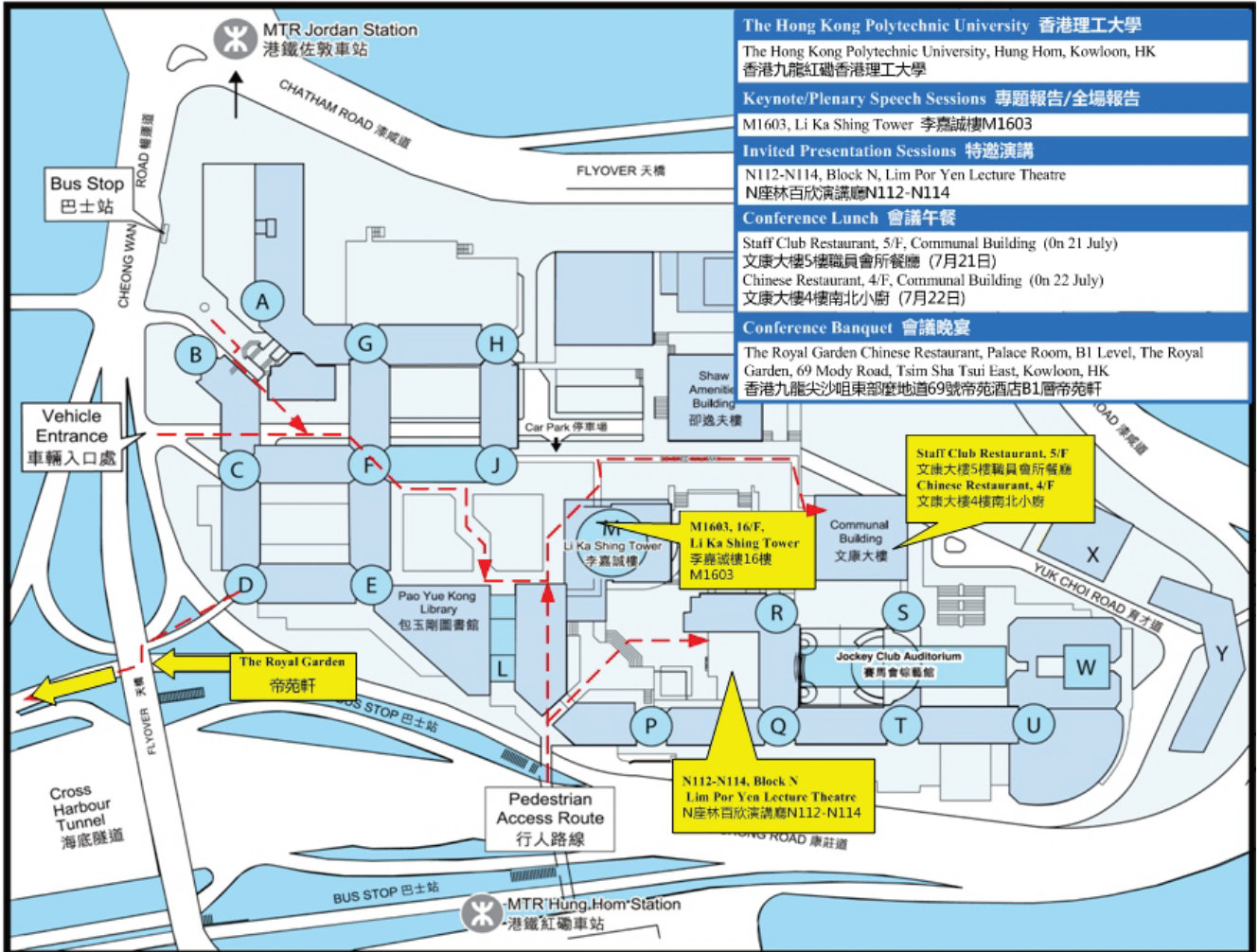
PolyU Base Building, Shenzhen, China

中國深圳市香港理工大學產學研大樓



The Hong Kong Polytechnic University campus map, Hong Kong

香港理工大學校園地圖



Keynote/Plenary Speech Sessions

主題報告/全場報告

Venue: Room 201, PolyU Base Building, 18 Yuexing Road, High-tech Industrial Park, Nanshan District, Shenzhen, China (in Shenzhen);

M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK (in Hong Kong).

地點：中國深圳市南山區高新科技園粵興一道18號（可沿白石路至白石路與科技南一路交叉口）

香港理工大學產學研大樓201室（深圳）；

香港九龍紅磡香港理工大學李嘉誠樓M1603（香港）。

Invited Presentation Sessions

特邀報告

Venue: Rooms 201, 303 and 306, PolyU Base Building, Shenzhen, China (in Shenzhen);

N112-N114, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK (in Hong Kong).

地點：中國深圳市香港理工大學產學研大樓201, 303及306室（深圳）；

香港九龍紅磡香港理工大學N座林百欣演講廳N112-N114（香港）。

Conference Buffet/Lunch

會議自助餐/午餐

Venue: Room 209, PolyU Base Building, Shenzhen, China (on 20 July in Shenzhen);

Staff Club Restaurant, 5/F, Communal Building, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK (on 21 July in Hong Kong);

Chinese Restaurant, 4/F, Communal Building, The Hong Kong Polytechnic University, Hung Hom, Kowloon, HK (on 22 July in Hong Kong).

地點：中國深圳市香港理工大學產學研大樓209室（7月20日，深圳）；

香港九龍紅磡香港理工大學文康大樓5樓職員會所餐廳（7月21日，香港）；

香港九龍紅磡香港理工大學文康大樓4樓南北小廚（7月22日，香港）。

Conference Dinner in Shenzhen (20 July)

深圳會議晚餐（7月20日）

Venue: Laoshaoxing Restaurant, F/3, Block 2, Financial Base, 8 Kefa Road, Nanshan District, Shenzhen, China (Telephone: 86-755-83351111).

地點：中國深圳市南山區科發路8號金融基地二棟三層老紹興酒樓（電話：86-755-83351111）。

Conference Banquet in Hong Kong (21 July)

香港會議晚宴（7月21日）

Venue: The Royal Garden Chinese Restaurant, Palace Room, B1 Level, The Royal Garden, 69 Mody Road, Tsim Sha Tsui East, Kowloon, HK (Telephone: 852-27242666).

地點：香港九龍尖沙咀東部麼地道69號帝苑酒店B1層帝苑軒（電話：852-27242666）。

Time schedule for Buses from Hotels to Conference Venue (on 20 July)

專車由酒店接送至會場時間表 (7月20日)

Please check-out before leaving for the conference venue if you join the Hong Kong workshop. After the dinner in Shenzhen, two buses will pick up you directly from the restaurant to Hong Kong.

若您繼續參加香港會議，請在前往會場前自行退房（行李可放在接送車上）。深圳的晚餐結束後，與會者將由專車直接從酒樓送往香港。

Time 時間	Venue 地點	Gathering Place 集合地點
07:20	Seaview O • City Hotel Shenzhen 深圳海景奧思廷酒店	Hotel Lobby 酒店大堂
07:20	Jinhui Hotel 深圳金暉酒店	Hotel Lobby 酒店大堂
07:20	ACK Cyber Hotel 深圳雅商會館	Hotel Lobby 酒店大堂

Conference Banquet (21 July)

會議晚宴 (7月21日)

Venue: The Royal Garden Chinese Restaurant, Palace Room, B1 Level, The Royal Garden, 69 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong (Telephone: 852-27242666)

地點：香港九龍尖沙咀東部麼地道69號帝苑酒店B1層帝苑軒 (電話：852-27242666)



CONFERENCE PROGRAMME

19-22 July 2011, Shenzhen & Hong Kong

19 July 2011, Tuesday, Shenzhen

Registration

Venue: PolyU Base Building, 18 Yuexing Road, High-tech Industrial Park, Nanshan District, Shenzhen, China

14:00 – 17:00 Registration

1st Day (20 July 2011, Wednesday, Shenzhen)

Registration

08:00 – 17:00 Outside Room 201, PolyU Base Building

The registration counter will be open between 08:00 - 17:00

(Buses from hotels to conference venue between 07:20 - 08:25)

Opening Ceremony (08:30 to 09:00)

Venue: Room 201, PolyU Base Building

08:30 - 08:40 Speech by a guest from Science, Industry, Trade and Information Technology Commission of Shenzhen Municipality, China

08:40 - 08:50 Welcome address by Ir. Prof. Guo-tang Zhao (Co-chair)
Beijing-Shanghai High-speed Railway Company Ltd., China

08:50 - 09:00 Welcome address by Prof. Alex Ping-kong Wai (Co-chair)
The Hong Kong Polytechnic University, Hong Kong

Session 1 (Keynote/Plenary Session, 09:00 to 10:30)

Venue: Room 201, PolyU Base Building

Chairs: Prof. Alex Ping-kong Wai, The Hong Kong Polytechnic University, Hong Kong

Ir. Prof. Guo-tang Zhao, Beijing-Shanghai High-speed Railway Company Ltd., China

09:00 - 09:50 The evolution and outlook of core technologies for high speed railway in China

Author(s): Kang-kuen Lee, Hong Kong MTR Corporation Ltd., Hong Kong

Presenter: Ir. Dr. Kang-kuen Lee, Hong Kong MTR Corporation Ltd., Hong Kong

09:50 - 10:30 **Health monitoring for the high speed railway system based on HHT**
Author(s): Norden E. Huang, National Central University, Taiwan
Presenter: Prof. Norden E. Huang, National Central University, Taiwan

10:30 - 10:50 Tea Break

Session 2 (Keynote/Plenary Session, 10:50 to 12:10)

Venue: Room 201, PolyU Base Building

Chairs: Prof. Norden E. Huang, National Central University, Taiwan
Prof. Yi-qing Ni, The Hong Kong Polytechnic University, Hong Kong

10:50 - 11:30 **Advanced assessment methods for ensuring safety and durability of high-speed rail vehicles**
Author(s): Ping-sha Dong, The University of New Orleans, USA; Wen-zhong Zhao, Dalian Jiaotong University, China
Presenter: Prof. Ping-sha Dong, The University of New Orleans, USA

11:30 - 12:10 **Application of train-bridge-interaction analysis to bridge design of high-speed railways in China**
Author(s): H. Xia, N. Zhang, W.W. Guo, Beijing Jiaotong University, China
Presenter: Prof. He Xia, Beijing Jiaotong University, China

12:10 - 13:30 Lunch Buffet

Session 3 (Invited Presentation in English, 13:30 to 14:50)

Venue: Room 201, PolyU Base Building

Chairs: Prof. He Xia, Beijing Jiaotong University, China
Dr. Wen-jing Wang, Beijing Jiaotong University, China

13:30 - 13:50 **Study on the earthquake early warning system for high-speed railway**
Author(s): Jian-jing Zhang, Da-yong Qin, Southwest Jiaotong University Railway Development Co. Ltd., China
Presenter: Ir. Jian-jing Zhang, Southwest Jiaotong University Railway Development Co. Ltd., China

13:50 - 14:10 **Wireless sensor networks for earthquake early warning systems of railway lines**
Author(s): Dan Wang, Yi-qing Ni, The Hong Kong Polytechnic University, Hong Kong
Presenter: Dr. Dan Wang, The Hong Kong Polytechnic University, Hong Kong

14:10 - 14:30 **Semi-active control and its robustness for a bogie model with uncertain parameters**
Author(s): Na Zhao, Deng-qing Cao, Harbin Institute of Technology, China
Presenter: Prof. Deng-qing Cao, Harbin Institute of Technology, China

14:30 - 14:50 **On-track load spectrum test study of high speed train bogie**
Author(s): W.J. Wang, S.G. Sun, S.L. Liang, Beijing Jiaotong University, China
Presenter: Dr. Wen-jing Wang, Beijing Jiaotong University, China

Session 4 (Invited Presentation in Chinese, 13:30 to 14:50)

Venue: Room 303, PolyU Base Building

Chairs: Dr. Tong-gang Zhang, Southwest Jiaotong University, China

Dr. Shan Gao, Southwest Jiaotong University, China

- 13:30 - 13:50 Study on the safety boundary for high speed trains in sever environments**
Author(s): Xue-song Jin, Xin-biao Xiao, Liang Ling, Southwest Jiaotong University, China
Presenter: Prof. Xue-song Jin, Southwest Jiaotong University, China
- 13:50 - 14:10 Method of the laboratory interoperability test for the onboard equipment of CTCS-3 train control system**
Author(s): Tao Tang, Yu Liu, Bin Ning, Kai-li Chen, Lei Yuan, Beijing Jiaotong University, China
Presenter: Prof. Tao Tang, Beijing Jiaotong University, China
- 14:10 - 14:30 Advanced analysis on coupling vibration of wind-vehicle-bridge systems**
Author(s): Yong-le Li, Southwest Jiaotong University, China
Presenter: Prof. Yong-le Li, Southwest Jiaotong University, China
- 14:30 - 14:50 An acceleration data based inverse analysis on the assessment of track irregularities**
Author(s): W.F. Chen, J.Y. Shih, C.Y. Wang, C.L. Liao, China Engineering Consultants, Inc., Taiwan
Presenter: Ir. Wei-fan Chen, China Engineering Consultants, Inc., Taiwan

Session 5 (Invited Presentation in Chinese, 13:30 to 14:50)

Venue: Room 306, PolyU Base Building

Chairs: Prof. Ji-sheng Li, Tsinghua University, China

Prof. Xiao-feng Shao, Tsinghua University, China

Special session on operation management of high-speed railway systems

- 13:30 - 13:50 Transit operation platform for high-speed railway**
Author(s): Xiao-feng Shao, Ji-sheng Li, Yang Dong, Tsinghua University, China
Presenter: Prof. Xiao-feng Shao, Tsinghua University, China
- 13:50 - 14:10 Research and implementation of intercity railway ticketing system**
Author(s): Feng Li, Gang Wu, Li-ming Zhang, Tsinghua University, China
Presenter: Ir. Feng Li, Tsinghua University, China
- 14:10 - 14:30 Study on passenger service system for intelligent train**
Author(s): Jun-jie Liu, Zhi-min Gao, Peng Wang, Tsinghua University, China
Presenter: Ir. Jun-jie Liu, Tsinghua University, China
- 14:30 - 14:50 A real-time revenue management model for high-speed railway**
Author(s): Yun Wang, Bo-xiong Lan, Qin Huang, Tsinghua University, China
Presenter: Ir. Yun Wang, Tsinghua University, China

14:50 – 15:00 Tea Break

Session 6 (Invited Presentation in English, 15:00 to 17:00)

Venue: Room 201, PolyU Base Building

Chairs: Prof. Deng-qing Cao, Harbin Institute of Technology, China

Dr. Chung-fai Ng, The Hong Kong Polytechnic University, Hong Kong

- 15:00 - 15:20 The effects of floating slab bending resonances on the vibration isolation of rail viaduct**
Author(s): C.F. Ng, C.K. Hui, The Hong Kong Polytechnic University, Hong Kong
Presenter: Dr. Chung-fai Ng, The Hong Kong Polytechnic University, Hong Kong
- 15:20 - 15:40 Health monitoring and disease prevention of curve tracks**
Author(s): Y.F. Duan, Q.B. Ni, Y. Zhu, B.Q. Gao, Zhejiang University, China
Presenter: Dr. Yuan-feng Duan, Zhejiang University, China
- 15:40 - 16:00 Development of piezoelectric transformer-coupled solid state relays for electrical circuit control in railway systems**
Author(s): W. Kuang, S.W. Or, C.M. Leung, S.L. Ho, The Hong Kong Polytechnic University, Hong Kong
Presenter: Mr. W. Kuang, The Hong Kong Polytechnic University, Hong Kong
- 16:00 - 16:20 Vibration measurement on viaduct of Taiwan high speed railway**
Author(s): Ming-hung Chen, China Engineering Consultants, Inc., Taiwan
Presenter: Dr. Ming-hung Chen, China Engineering Consultants, Inc., Taiwan
- 16:20 - 16:40 Application of strut-and-tie models in the design of railway reinforced concrete structure**
Author(s): Jin-xin Gong, Ji-chao Zhu, Dalian Jiaotong University, China
Presenter: Ir. Ji-chao Zhu, Dalian Jiaotong University, China
- 16:40 - 17:00 Coupled vibration analysis of railway continuous BEAM bridge and vehicles with soil-structure interaction**
Author(s): Xiao-zhen Li, Xiao-han Liu, De-jun Liu, Southwest Jiaotong University, China
Presenter: Prof. Xiao-zhen Li, Southwest Jiaotong University, China

Session 7 (Invited Presentation in Chinese, 15:00 to 17:00)

Venue: Room 303, PolyU Base Building

Chairs: Prof. Xue-song Jin, Southwest Jiaotong University, China

Prof. Yong-le Li, Southwest Jiaotong University, China

- 15:00 - 15:20 The problem and strategy on subsidence assessment of construction projects under ballastless track in Chinese high-speed railway**
Author(s): Shan Gao, Zhi-qiang Gong, Southwest Jiaotong University, China
Presenter: Dr. Shan Gao, Southwest Jiaotong University, China

- 15:20 - 15:40 Hybrid prediction model for high-speed railway embankment settlement using grey artificial neural networks**
Author(s): Tong-gang Zhang, Zhong-bo Hu, Chun-feng Yang, Southwest Jiaotong University, China
 Presenter: Dr. Tong-gang Zhang, Southwest Jiaotong University, China
- 15:40 - 16:00 Ontology-based approach for automated quality inspection against regulation in metro construction project**
Author(s): Bo-tao Zhong, Han-bin Luo, Jun Sun, Yun-zhong Hu, Huazhong University of Science and Technology, China
 Presenter: Dr. Bo-tao Zhong, Huazhong University of Science and Technology, China
- 16:00 - 16:20 Conceptual design of the prestressed structures**
Author(s): Wen-zheng Su, Dalian Jiaotong University, China
 Presenter: Dr. Wen-zheng Su, Dalian Jiaotong University, China
- 16:20 - 16:40 Bridge design concept and innovation of Chengdu-Dujiangyan intercity railway - post Wenchuan Earthquake reconstruction project in Sichuan, China**
Author(s): Lie Chen, Ying Zhu, China Railway Eryuan Survey Engineering Group Corporation Ltd., China
 Presenter: Ir. Lie Chen, China Railway Eryuan Survey Engineering Group Corporation Ltd., China
- 16:40 – 17:00 Predicting the vehicle induced building vibration by multi-source fuzzy dynamic analysis**
Author(s): Bai-sheng Wang, Yin-wu Yang, Wei-qiu Chen, Zhejiang University, China
 Presenter: Prof. Bai-sheng Wang, Zhejiang University, China

Session 8 (Invited Presentation in Chinese, 15:00 to 17:00)

Venue: Room 306, PolyU Base Building

Chairs: Prof. Xiao-zhen Mi, Dalian Jiaotong University, China
 Prof. Tao Tang, Beijing Jiaotong University, China

- 15:00 - 15:20 Magnesium alloys - new materials for high speed train with reduced vibration and noise**
Author(s): Gao-feng Quan, Rui-chun Li, Xue Gu, Zhao-ming Liu, Southwest Jiaotong University, China
 Presenter: Ir. Prof. Rui-chun Li, CNR Changchun Railway Vehicles Co., Ltd., Changchun, China
- 15:20 - 15:40 The new wheel profile design method for high-speed vehicle**
Author(s): Da-bin Cui, Zhao-wei Huang, Xue-song Jin, Southwest Jiaotong University, China
 Presenter: Mr. Da-bin Cui, Southwest Jiaotong University, China
- 15:40 - 16:00 Numerical research on temperature field of equipment compartment of 350km/h EMU running on open line**
Author(s): Dong-ping Wang, Guang-ping Xu, Feng Liu, Xiao-zhen Mi, Dalian Jiaotong University, China
 Presenter: Prof. Xiao-zhen Mi, Dalian Jiaotong University, China

- 16:00 - 16:20** **Contrastive study on carbody vibration of high-speed rail stock based on air-spring suspension characteristics**
Author(s): Ming-wei Piao, Xiao-zhen Mi, Ji Fang, Wen-zhong Zhao, Dalian Jiaotong University, China
 Presenter: Prof. Ming-wei Piao, Dalian Jiaotong University, China
- 16:20 - 16:40** **Fatigue design of bogie parts based on master S-N curve method**
Author(s): Xiao-feng Li, Xiang-wei Li, Su-ming Xie, Wen-zhong Zhao, Dalian Jiaotong University, China
 Presenter: Dr. Xiao-feng Li, Dalian Jiaotong University, China
- 16:40 - 17:00** **Fatigue life analysis of CRH3 carbody basing on rigid-flexible coupling model and S-N curve**
Author(s): W.Z. Zhao, J. Fang, J. Zhang, Dalian Jiaotong University, China
 Presenter: Dr. Ji Fang, Dalian Jiaotong University, China
- 17:00 - 17:30 Buses from conference venue to restaurant (dinner)
- 17:30 - 19:00 Dinner
- 19:00 – 21:00 Buses from restaurant to Hong Kong

2nd Day (21 July 2011, Thursday, Hong Kong)

Registration

08:00 – 18:00 Outside M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University
 (The registration counter will be open between 08:00 - 18:00)

Special Guest Speech (08:30 to 09:00)

Venue: M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University

Chairs: Prof. Otto Lin, The Hong Kong Polytechnic University, Hong Kong
 Ir. De-tian Niu, CNR Changchun Railway Vehicle Company Ltd., China

08:30 – 09:00 Beijing-Shanghai High Speed Railway

Presenter: Ir. Prof. Guo-tang Zhao, Beijing-Shanghai High-speed Railway Company Ltd., China

Session 9 (Keynote/Plenary Session, 09:00 to 10:30)

Venue: M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University

Chairs: Prof. Siu-lau Ho, The Hong Kong Polytechnic University, Hong Kong
 Prof. Li Cheng, The Hong Kong Polytechnic University, Hong Kong

09:00 - 09:50 Study on the dynamics theory based on the high-speed train coupling system and its application

Author(s): W.H. Zhang, M.R. Chi, X.S. Jin, N. Zhou, J.Y. Zhang, C.B. Cai, Southwest Jiaotong University, China
 Presenter: Prof. Wei-hua Zhang, Southwest Jiaotong University, China

09:50 - 10:30 Aerodynamic design on China new high-speed trains
Author(s): Guo-wei Yang, Institute of Mechanics, Chinese Academy of Sciences, China
Presenter: Prof. Guo-wei Yang, Institute of Mechanics, Chinese Academy of Sciences, China

10:30 - 10:50 Tea Break

Session 10 (Keynote/Plenary Session, 10:50 to 12:10)

Venue: M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University

Chairs: Prof. Wen-zhong Zhao, Dalian Jiaotong University, China
Prof. Ping-sha Dong, The University of New Orleans, USA

10:50 - 11:30 A new development trend of railway transportation
Author(s): Ching-lung Liao, China Engineering Consultants, Inc., Taiwan
Presenter: Ir. Prof. Ching-lung Liao, China Engineering Consultants, Inc., Taiwan

11:30 - 12:10 High-speed railway passenger dedicated service system
Author(s): Ke-jun Kang, Tsinghua University, China
Presenter: Prof. Ke-jun Kang, Tsinghua University, China

12:30 - 13:30 Lunch

Session 11 (Plenary Session, 14:00 to 15:40)

Venue: M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University

Chairs: Ir. Prof. Ching-lung Liao, China Engineering Consultants, Inc., Taiwan
Prof. Wei-hua Zhang, Southwest Jiaotong University, China

14:00 - 14:25 System design and innovation of ballastless track on Chengdu-Dujiangyan Fast Railway
Author(s): Ying Zhu, China Railway Eryuan Survey Engineering Group Corporation Ltd., China
Presenter: Ir. Ying Zhu, China Railway Eryuan Survey Engineering Group Corporation Ltd., China

14:25 - 14:50 Key technology and research topics of heavy haul and fast wagon
Author(s): Hong-liang Wei, Yue-bin Yu, Xiang-wei Li, CNR Qiqihar Railway Rolling Stock Company Ltd., China
Presenter: Ir. Yue-bin Yu, CNR Qiqihar Railway Rolling Stock Company Ltd., China

14:50 - 15:15 High-speed train bogie wheel-rail relative vibration with bench reconstruction technology
Author(s): Xing-yu Wang, Shu-lin Liang, Wen-xue Li, Dian-mai Zhou, CNR Changchun Railway Vehicle Company Ltd., China
Presenter: Dr. Ir. Xing-yu Wang, CNR Changchun Railway Vehicle Company Ltd., China

15:15 - 15:40 **Theoretical and experimental studies on high-speed bogie stability margin regulations**
Author(s): Ming-wei Piao, Shu-lin Liang, Xiao-zhen Mi, Wen-zhong Zhao, Dalian Jiaotong University, China
Presenter: Prof. Ming-wei Piao, Dalian Jiaotong University, China

15:40 - 15:55 Tea Break

Session 12 (Plenary Session, 15:55 to 18:00)

Venue: M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University

Chairs: Prof. Ke-jun Kang, Tsinghua University, China

Prof. San-qiang Shi, The Hong Kong Polytechnic University, Hong Kong

15:55 - 16:20 **High-force compressible MR fluid damper-liquid spring suspension system for land vehicles**
Author(s): Faramarz Gordaninejad, University of Nevada, USA
Presenter: Prof. Faramarz Gordaninejad, University of Nevada, USA

16:20 - 16:45 **Railway track allocation - simulation, aggregation, and optimization**
Author(s): Ralf Borndörfer, Thomas Schlechte, Elmar Swarat, Zuse Institute Berlin, Germany
Presenter: Mr. Thomas Schlechte, Zuse Institute Berlin, Germany

16:45 - 17:10 **Automated passenger time optimal, robust timetabling, using mixed integer programming**
Author(s): Peter Sels, Thijs Dewilde, Dirk Cattrysse, Pieter Vansteenwegen, Logically Yours BVBA, Belgium
Presenter: Mr. Peter Sels, Logically Yours BVBA, Belgium

17:10 - 17:35 **Integrated planning of railway transportation resources**
Author(s): Faten Benhizia, National French Railway Transportation (SNCF), France
Presenter: Mr. Faten Benhizia, National French Railway Transportation (SNCF), France

17:35 - 18:00 **The concept of operations assurance and its application in metro railway**
Author(s): Ronald K.W. Cheng, Ryan C.M. Lam, MTR Corporation Ltd., Hong Kong
Presenter: Ir. Ronald K.W. Cheng, MTR Corporation Ltd., Hong Kong

Poster Session (14:00 to 18:00)

Study on preventing and controlling strong wind disaster on high-speed railway
Author(s): Shu-hong Ma, Peking University, China; Yun-juan Ma, KTK Group, China

Aerodynamic numerical simulation for EMU passing each other in tunnel
Author(s): Dong-ping Wang, Wei-peng Li, Wen-zhong Zhao, Han Han, Dalian Jiaotong University, China

Dynamic and static load testing on Tianxingzhou Yangtze River Bridge of the Beijing-Guangzhou Express Railway
Author(s): Qi-xian Tian, Kai-li Chen, Hai-ying Xu, Bridge Science Research Institute Ltd. of Zhong Tie Major Bridge Engineering Group, China

Analysis of the controlling factors of Chengdu-Lanzhou railway location in 5.12 Wenchuan earthquake-stricken areas

Author(s): Chang-yi Yang, Wen-li Meng, China Railway Eryuan Survey Engineering Group Corporation Ltd., China

Computer simulation technology for track system optimization in urban rail transit design

Author(s): Zhen-xing He, China Railway Eryuan Survey Engineering Group Corporation Ltd., China

Modal parameter identification of linear time invariant system under non-stationary ambient excitation

Author(s): Lu-kai Xiang, Qiu-hai Lu, China Railway Eryuan Survey Engineering Group Corporation Ltd., China

Entropy-based AE characteristics of natural fatigue cracks in the rotating shaft model of high speed train

Author(s): Li Lin, Fu-lei Chu, Wei Tong, Wen-xiu Lu, Dalian Jiaotong University, China

The reasonable fastener damping of Ballastless Turnout's vibration decrease and noise reduction of 350 km/h passenger dedicated line

Author(s): Jing-mang Xu, Ping Wang, Da-zhen Xu, Southwest Jiaotong University, China

Dynamic responses due to different sub-rail stiffness of bolted alloy steel frog

Author(s): Yang Cao, Ping Wang, Wei-hua Zhao, Southwest Jiaotong University, China

The design of gauge-widen switch for high-speed turnout

Author(s): Guo Jing, Ping Wang, Jin-hui Xu, Southwest Jiaotong University, China

Simplified algorithms for continuous welded rail design on large-span steel truss cable-stayed bridge

Author(s): Wei-hua Zhang, Ping Wang, Yang Cao, Southwest Jiaotong University, China

Structural optimization and performance analysis on the slab of the unit slab track system

Author(s): Ya-hang Liu, Feng Dai, Jie-ling Xiao, Ping Wang, Southwest Jiaotong University, China

Study on the design of Chinese vehicle for both railways and highways

Author(s): Yong Gao, Wei Dong, Qi Zhang, Dalian Jiaotong University, China

The impact research of buckle pressure on rail vibration

Author(s): Hao Xu, Jin-hui Xu, Guo Jing, Ping Wang, Qi-qi Dai, Southwest Jiaotong University, China

Study on vibration and acoustics radiation characteristics of rails

Author(s): Cai-you Zhao, Ping Wang, Southwest Jiaotong University, China

The study on the influence on the high-speed railway bridge's pile foundation by regional land settlement

Author(s): Long-qi Li, Shu-xue Luo, Wen-kai Wei, Chang-bing Hou, Southwest Jiaotong University, China

Influences of pile cap effect in piled embankment supporting high-speed railway

Author(s): Hong-yun Chen, Jian-lin Ma, Xiao-gang Qin, Southwest Jiaotong University, China

Design and implementation of data generation for CBTC

Author(s): Qiu-li Dong, You-neng Huang, Wei Wang, Beijing Jiaotong University, China

Analysis of vertical dynamic characteristics on rubber floating slab track system

Author(s): Ke-fei Liu, Xue-yi Liu, Southwest Jiaotong University, China

The high-speed train unsteady effect of cross wind based on hybrid grids and navier-stokes equations

Author(s): Guan-nan Zheng, Guo-wei Yang, Institute of Mechanics, Chinese Academy of Sciences, China

18:45 - 20:45 Conference Banquet

3rd Day (22 July 2011, Friday, Hong Kong)

Registration

08:00 – 17:50 Outside M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University
(The registration counter will be open between 08:00 - 17:50)

Session 13 (Keynote/Plenary Session, 08:30 to 11:00)

Venue: M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University

Chairs: Prof. Hwa-yaw Tam, The Hong Kong Polytechnic University, Hong Kong
Prof. Faramarz Gordaninejad, University of Nevada, USA

08:30 - 09:20 Energy saving strategies for railways

Author(s): Clive Roberts, University of Birmingham, UK

Presenter: Prof. Clive Roberts, University of Birmingham, UK

09:20 - 10:00 Effects of shifting running time supplements

Author(s): Thomas Siefer, Steffen Fangrat, Technische Universität Braunschweig, Germany

Presenter: Prof. Thomas Siefer, Technische Universität Braunschweig, Germany

10:00 - 10:40 Railway dynamometric wheelsets: a comparison of existing solutions and a proposal for the reduction of measurement errors

Author(s): E. Gómez, A. Alonso, J.G. Giménez, J. Vinolas, CEIT and TECNUN (University of Navarra), Spain

Presenter: Prof. Jordi Vinolas, CEIT and TECNUN (University of Navarra), Spain

10:40 - 11:00 Tea Break

Session 14 (Keynote/Plenary Session, 11:00 to 12:00)

Venue: M1603, Li Ka Shing Tower, The Hong Kong Polytechnic University

Chairs: Prof. Thomas Siefer, Technische Universität Braunschweig, Germany

Prof. Jordi Vinolas, CEIT and TECNUN (University of Navarra), Spain

11:00 - 11:30 Performance monitoring and analysis of viaduct of high speed rail system due to passage of rolling stock

Author(s): Chung-Yue Wang, National Central University, Taiwan

Presenter: Prof. Chung-Yue Wang, National Central University, Taiwan

11:30 - 12:00 Advanced multiparameter optical fiber sensing systems for railway monitoring

Author(s): Hwa-yaw Tam, The Hong Kong Polytechnic University, Hong Kong

Presenter: Prof. Hwa-yaw Tam, The Hong Kong Polytechnic University, Hong Kong

12:30 - 13:30 Lunch

Session 15 (Invited Presentation in English, 14:00 to 15:40)

Venue: N112, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University

Chairs: Dr. Dan Wang, The Hong Kong Polytechnic University, Hong Kong

Mr. Markus Reuther, Zuse Institute Berlin, Germany

14:00 - 14:20 Risk-based railway systems design adopted for the XRL

Author(s): C.L. Leung, S. Wong, MTR Corporation Ltd., Hong Kong

Presenter: Ir. C.L. Leung, MTR Corporation Ltd., Hong Kong

14:20 - 14:40 Vehicle rotation planning for intercity railways

Author(s): Ralf Borndörfer, Markus Reuther, Thomas Schlechte, Steffen Weider, Zuse Institute Berlin, Germany

Presenter: Mr. Markus Reuther, Zuse Institute Berlin, Germany

14:40 - 15:00 A CAD software for traction drive system of high speed train led by top-level technology goals

Author(s): Xiao-chun Fang, Zhong-ping Yang, Kun Zhao, Ke Li, Huai-yu Xu, Beijing Jiaotong University, China

Presenter: Mr. Xiao-chun Fang, Beijing Jiaotong University, China

15:00 - 15:20 A position estimation method based on modified integrator of PMSM sensorless control for high-speed vehicles

Author(s): Qian Yuan, Zhong-ping Yang, Ling Cui, Tai-yuan Hu, Fei Lin, Beijing Jiaotong University, China

Presenter: Ms. Qian Yuan, Beijing Jiaotong University, China

15:20 - 15:40 Testing study on working mechanism of rigid subgrade structure on deep soft foundation

Author(s): Qian Su, Hao Bai, Xing Li, Long-biao Liang, Ze-yu Mao, Southwest Jiaotong University, China

Presenter: Prof. Qian Su, Southwest Jiaotong University, China

Session 16 (Invited Presentation in English, 14:00 to 15:40)

Venue: N113, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University

Chairs: Prof. Chung-Yue Wang, National Central University, Taiwan

Mr. Faten Benhizia, National French Railway Transportation (SNCF), France

14:00 - 14:20 Failure detection on train bogies using guided-waves and image-based approach

Author(s): Ming-yu Lu, Li-min Zhou, The Hong Kong Polytechnic University, Hong Kong

Presenter: Ms. Ming-yu Lu, The Hong Kong Polytechnic University, Hong Kong

14:20 - 14:40 Detection of fatigue cracks in train structures using nonlinear lamb waves

Author(s): Qiang Wang, Zhong-qing Su, Li Cheng, Chao Zhou, The Hong Kong Polytechnic University, Hong Kong

Presenter: Dr. Qiang Wang, The Hong Kong Polytechnic University, Hong Kong

14:40 - 15:00 Magnetolectric smart current sensors for wireless condition monitoring of train traction systems

Author(s): C.M. Leung, S.Y. Zhang, S.W. Or, S. L. Ho, K.Y. Lee, The Hong Kong Polytechnic University, Hong Kong

Presenter: Mr. C.M. Leung, The Hong Kong Polytechnic University, Hong Kong

15:00 - 15:20 An FBG-based sensor tailor-made for wind pressure monitoring of high-speed trains

Author(s): Shi-de Song, Yi-qing Ni, Xiao-wei Ye, The Hong Kong Polytechnic University, Hong Kong

Presenter: Dr. Shi-de Song, The Hong Kong Polytechnic University, Hong Kong

15:20 - 15:40 Affected factors upon dynamic performance of train and track on roadbed-bridge transition section of the slab Track

Author(s): Ya-hang Liu, Feng Dai, Yuan-xing Hao, Xue-yi Liu, Southwest Jiaotong University, China

Presenter: Mr. Feng Dai, Southwest Jiaotong University, China

Session 17 (Invited Presentation in Chinese, 14:00 to 15:40)

Venue: N114, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University

Chairs: Prof. Yuan-gui Mei, Lanzhou Jiaotong University, China

Dr. Randolph Chi-kin Leung, The Hong Kong Polytechnic University, Hong Kong

Special session on aerodynamics related to high-speed rails

14:00- 14:20 A new approach for acceleration of train model with compressed air

Author(s): Q.S. Yang, J.H. Song, G.W. Yang, Institute of Mechanics, Chinese Academy of Sciences, China

Presenter: Prof. Qian-suo Yang, Institute of Mechanics, Chinese Academy of Sciences, China

14:20 - 14:40 A numerical study on aerodynamic noise sources of high-speed train

Author(s): Yan Yang, Guo-wei Yang, Institute of Mechanics, Chinese Academy of Sciences, China

Presenter: Prof. Yan Yang, Institute of Mechanics, Chinese Academy of Sciences, China

- 14:40 - 15:00** **The influences of different cross-section shapes of train body on the aerodynamic performance**
Author(s): C.H. Liu, D.L. Guo, S.B. Yao, G.W. Yang, Institute of Mechanics, Chinese Academy of Sciences, China
 Presenter: Mr. Chen-hui Liu, Institute of Mechanics, Chinese Academy of Sciences, China
- 15:00 - 15:20** **Aerodynamic loads influence in tunnel and fatigue damage for the high-speed train body**
Author(s): Yue-dong Wang, Wen-zhong Zhao, Bing-zhi Chen, Dalian Jiaotong University, China
 Presenter: Dr. Yue-dong Wang, Dalian Jiaotong University, China
- 15:20 - 15:40** **Influence of the type of cross wind field on the aerodynamic performance of a high-speed train**
Author(s): Yan-hong Xi, Jun Mao, Guo-wei Yang, Beijing Jiaotong University, China
 Presenter: Ms. Yan-hong Xi, Beijing Jiaotong University, China

15:40 - 15:50 Tea Break

Session 18 (Invited Presentation in English, 15:50 to 17:30)

Venue: N112, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University

Chairs: Prof. Li-min Zhou, The Hong Kong Polytechnic University, Hong Kong
 Mr. Peter Sels, Logically Yours BVBA, Belgium

- 15:50 - 16:10** **Simulation of dynamic current collection of elastic catenary suspension system**
Author(s): Ran Liu, Wen-zheng Liu, Hui-sheng Yang, Zhao-feng Gong, Wei-liang Wang, Zhong-ping Yang, Beijing Jiaotong University, China
 Presenter: Ms. Ran Liu, Beijing Jiaotong University, China
- 16:10 - 16:30** **A study on the generated characteristics of the arc discharge for contact-loss of the pantograph-catenary**
Author(s): Wen-zheng Liu, Zhong-ping Yang, Zhao-feng Gong, Wei-liang Wang, Hui-sheng Yang, Ran Liu, Beijing Jiaotong University, China
 Presenter: Mr. Zhao-feng Gong, Beijing Jiaotong University, China
- 16:30 - 16:50** **The flux-weakening control of interior permanent magnet synchronous traction motors for high-speed train**
Author(s): Tai-yuan Hu, Fei Lin, Ling Cui, Qian Yuan, Zhong-ping Yang, Beijing Jiaotong University, China
 Presenter: Ms. Qian Yuan, Beijing Jiaotong University, China
- 16:50 - 17:10** **Study on the control method of high-speed train traction motor continuous load simulation system**
Author(s): Ze-yu Yi, Zhong-ping Yang, Si-jie Li, Fei Lin, Wen-zheng Liu, Beijing Jiaotong University, China
 Presenter: Mr. Xiao-chun Fang*, Beijing Jiaotong University, China
- 17:10 - 17:30** **Restrat method of permanent magnet synchronous traction motors during coasting for high-speed train**
Author(s): Ling Cui, Zhong-ping Yang, Tai-yuan Hu, Qian Yuan, Fei Lin, Beijing Jiaotong University, China
 Presenter: Ms. Qian Yuan, Beijing Jiaotong University, China

Session 19 (Invited Presentation in Chinese, 15:50 to 17:30)

Venue: N113, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University

Chairs: Prof. Guang-ze Dai, Southwest Jiaotong University, China

Prof. Ming-wei Piao, Dalian Jiaotong University, China

- 15:50 - 16:10** **Shape optimization of high speed train with the speed of 500Kph**
Author(s): K. Cui, X.P. Wang, S.C. Hu, T.Y. Gao, G.W. Yang, Institute of Mechanics, Chinese Academy of Sciences, China
Presenter: Prof. Kai Cui, Institute of Mechanics, Chinese Academy of Sciences, China
- 16:10 - 16:30** **Numerical simulation for performance of light railway articulated passenger car-body**
Author(s): Su-ming Xie, Bo Yuan, Dalian Jiaotong University, China
Presenter: Prof. Su-ming Xie, Dalian Jiaotong University, China
- 16:30 - 16:50** **Dynamical response of pantograph-catenary coupled system with contact wire vertical irregularity**
Author(s): Rong-hua Huan, Wei-qiu Zhu, Zhejiang University, China
Presenter: Prof. Rong-hua Huan, Zhejiang University, China
- 16:50 - 17:10** **Performance and applications of aluminum alloy on high-speed railways**
Author(s): Guang-ze Dai, Lei Xu, Southwest Jiaotong University, China
Presenter: Prof. Guang-ze Dai, Southwest Jiaotong University, China
- 17:10 - 17:30** **Analysis on influence of fastener spacing over dynamic properties of high-speed railway vehicles and track**
Author(s): Pei-gang Li, Xue-yi Liu, Chuan He, Dan Liu, Southwest Jiaotong University, China
Presenter: Mr. Pei-gang Li, Southwest Jiaotong University, China

Session 20 (Invited Presentation in Chinese, 15:50 to 17:30)

Venue: N114, Block N, Lim Por Yen Lecture Theatre, The Hong Kong Polytechnic University

Chairs: Prof. Bing-zhi Chen, Dalian Jiaotong University, China

Dr. Xiao-feng Li, Dalian Jiaotong University, China

- 15:50 - 16:10** **The one-dimensional unsteady flow prediction method and application on the pressure waves generated by high-speed trains passing through a tunnel**
Author(s): Y.G. Mei, C.H. Zhou, Lanzhou Jiaotong University, China
Presenter: Prof. Yuan-gui Mei, Lanzhou Jiaotong University, China
- 16:10 - 16:30** **Three-dimensional vehicle-track interaction analysis considering the track irregularities**
Author(s): J.Y. Shih, C.Y. Wang, W.F. Chen, R.Z. Wang, China Engineering Consultants, Inc., Taiwan
Presenter: Ms. Jou-yi Shih, China Engineering Consultants, Inc., Taiwan

- 16:30 - 16:50** **Measurement and identification techniques of track irregularity on high speed railway**
Author(s): H.C. Tsai, N.E. Huang, C.Y. Wang, National Central University, Taiwan
Presenter: Mr. H.C. Tsai, National Central University, Taiwan
- 16:50 - 17:10** **Analysis of force and displacement of ballastless turnout group with different connection form on continuous bridge**
Author(s): Yuan-xing Hao, Pei-gang Li, Rong-shan Yang, Southwest Jiaotong University, China
Presenter: Mr. Yuan-xing Hao, Southwest Jiaotong University, China
- 17:10 - 17:30** **Study on the vertical dynamic characteristics of unballasted track with composite sleeper**
Author(s): Dan Liu, Pei-gang Li, Jie-ling Xiao, Southwest Jiaotong University, China
Presenter: Ms. Dan Liu, Southwest Jiaotong University, China

GENERAL INFORMATION

Hong Kong – a magnificent city

Hong Kong is a Special Administrative Region of the People's Republic of China. It is a territory of about 1070 sq.km. located at the trading crossroads of Asia. Hong Kong is one of the world's leading economies, a major manufacturing and international financial centre, the world's busiest container port and the main gateway to the Chinese mainland. The climate in July is pleasant and dry, with an average temperature of 25 to 32°C.

Electricity

The voltage and frequency used in Hong Kong are 220 volts and 50 Hz, respectively.

Communication

Hong Kong has one of the best communication networks in the world. Local calls are free to subscribers but cost HK\$1 when using public telephones. Participants are reminded that hotels charge a high levy for telephone calls made in-house.