1st Japan-China Symposium on Railway Technology

8-9 August 2024, Tokyo, Japan

8 AUG (Tower Scola / Room S101)

09:30 - 09:40	Opening Remarks	Professor Hitoshi TSUNASHIMA (Nihon University) Professor Tomoyuki TODOROKI (Nihon University)
09:45 - 10:45	Keynote Speech 1 Chair: H. TSUNASHIMA	Professor Mingli WU (Beijing Jiaotong University) Resent research development of traction power supply of electric railway in China
10:45 - 11:00	Short Break	
11:00 - 11:20	Electrical System 1 Chairs: K. KONDO M. WU	Recent Trends in Automatic Train Operation Technology in Japan Takafumi KOSEKI (The University of Tokyo)
11:20 - 11:40		Study on the Application of Wayside Supercapacitor Energy Recovery Systems in Urban Rail Transit Zhongping YANG (Beijing Jiaotong University)
11:40 - 12:00		Research Trends on Energy-efficient Operation Technologies for Electric Railways in Japan Masafumi MIYATAKE (Sophia University)
12:00 - 13:00	Lunch	
13:00 - 13:20	Invited Speech Chairs: A. MATSUMOTO J. XU	Evolution of Railway Development and Operation Schemes in Japan Yoichi KANAYAMA (University of Toyama)
13:20 - 13:40	Civil Engineering	Drone-based Observation and Monitoring of Railway Infrastructure Threats Zhipeng WANG (Beijing Jiaotong University)
13:40 - 14:00		Study on the Market Demand and Development Trend of High-speed Railway Express Logistics in China Ke QIAO (Beijing Jiaotong University)
14:00 - 14:15	Short Break	
14:15 - 14:35	Electrical System 2 Chairs: T. KOSEKI J. KANG	Intelligent Health Management of Railway Point Machines Yuan CAO (Beijing Jiaotong University)
14:35 - 14:55		Recent Trends in Vehicle Traction System and Energy Storage Application Technologies Hiroyasu KOBAYASHI (Chiba University)
14:55 - 15:15		Analysis and Suppression Strategies of Thrust Fluctuations in High-Speed Maglev Linear Synchronous Motor Jinsong KANG (Tongji University)
15:15 - 15:35		Fault diagnosis of traction power supply system based on artificial intelligence Fulin ZHOU (Southwest Jiaotong University)
15:35 - 15:50	Short Break	
15:50 - 17:20	Shotgun Session	(Tower Scola / Room S204)
17:20 - 17:30	Closing Remarks	Photo session
17:30 - 18:00	Short Break	
18:00 - 19:30	Reception	(Building 1 / 2F Cafeteria)

9 AUG (Tower Scola / Room S101)

09:30 - 09:40	Opening Remarks	Professor Sei TAKAHASHI (Nihon University)
09:45 - 10:45	Keynote Speech 2 Chair: Z. YANG	Professor Hitoshi TSUNASHIMA (Nihon University) Current Status of Research and Education on Railway-related Technology at Japanese Universities of Science and Technology Professor Akira MATSUMOTO (Nihon University) Japanese Approach to Railway Accident Investigation and Past Experience
10:45 - 11:00	Short Break	
11:00 - 11:20	Operation and Signaling 1 Chairs: N. TOMII B. CAI	Dependable Train Positioning by Fusing Multiple Sensors Information Baigen CAI (Beijing Jiaotong University)
11:20 - 11:40		Transition of Fail-safe technology - From Fail-safe circuits to Fail-safe technology on Complex Systems - Hideo NAKAMURA (Nihon University)
11:40 - 12:00		Research and Applications of Rail Transit Safety Assurance and Intelligence Xinhong HEI (Xi'an University of Technology)
12:00 - 13:00	Lunch	
13:00 - 13:20	Operation and Signaling 2 Chairs: H. NAKAMURA X. WANG	Impact of COVID-19 on Train Operation in Japan Norio TOMII (Tokyo Tech / Nihon University)
13:20 - 13:40		Communication and signal processing technologies for advanced railway signaling systems Hiroshi MOCHIZUKI (Nihon University)
13:40 - 14:00	Mechanical System 1 Chairs: H. NAKAMURA X. WANG	Construction and Development of a Safety Assessment Center: From the Perspective of AI Safety Assurance Wei ZHENG (Beijing Jiaotong University)
14:00 - 14:20		Recent Technology on Steering Bogie in Japan Yohei MICHITSUJI (Ibaraki University)
14:20 - 14:35	Short Break	
14:35 - 14:55	Mechanical System 2 Chairs: Y. MICHITSUJI W. ZHENG	Rolling contact performance testing techniques for forward design and maintenance of roller bearings Xi WANG (Beijing Jiaotong University)
14:55 - 15:15		Wheel Profile Optimization Considering Rail Wear on Curved Sections Masahiko AKI (Nihon University)
15:15 - 15:35		Research on the dynamic theory, methods, and applications of the wheel-rail system in high-speed railway turnout Jingmang XU (Southwest Jiaotong University)
15:35 - 15:50	Short Break	
15:50 - 17:20	Shotgun Session	(Tower Scola / Room S204)
17:20 - 17:30	Closing Remarks	Professor Zhongping YANG (Beijing Jiaotong University)

Shotgun Session (Tower Scola / Room S204)

8 AUG (15:50 - 17:20) Chair: M. AKI

ST-1	Origin-Destination Estimation Method for Regional Trains Using Bluetooth Observation Data Masato NISHIWAKI (Nihon University)
ST-2	Establishment and application of load spectrum for high-speed train bogie frame Chengxiang JI (Beijing Jiaotong University)
ST-3	Railroad Level Crossing Using Mobile Phone Lines and Level Crossing Passage Assistance System for Road Vehicles Koki NAKAYAMA (Institute of Industrial Science, the University of Tokyo)
ST-4	Exploration of regenerative braking energy utilisation within the electrified railways Liran WU (Beijing Jiaotong University)
ST-5	Basic Proposal for Predicting Train Delay Time Using LSTM Keiji KATO (Nihon University)
ST-6	A Combined Experimental and Analytical Method to Determine the EHL Friction Force Distribution between Rollers and Outer Raceway in a Cylindrical Roller Bearing Yu HOU (Beijing Jiaotong University)
ST-7	Optimization of energy-saving operation of urban railway considering the use of regenerative braking energy Xuanlang MENG (The University of Tokyo)
ST-8	AI Safety Validation via Diverse Testing and Uncertainty Quantification Rui WANG (Beijing Jiaotong University)
ST-9	Fast and Scalable Optimization of Energy-Efficient Train Trajectory by Parallel Dynamic Programming Keisuke SAKAI(The University of Tokyo)
ST-10	Research on the Recognition Method of Internal Rail Defects in Heavy-Haul Railways Based on Deep Learning Yongkui SUN (Beijing Jiaotong University)
ST-11	Study on the mechanism of wheelset angular velocity change on curved tracks Yuzuki ENDO (Ibaraki University)
ST-12	Efficient dual-stream fusion network for real-time railway scene understanding Zhiwei CAO (Beijing Jiaotong University)
ST-13	Measurement experiment with scale model wheel and rail for longitudinal and lateral creep force Tomoyuki SUZUKI (Meisei University)
ST-14	Energy Management Strategy Based on Train Status Perception Yan LI (Beijing Jiaotong University)
ST-15	Impact Analysis of Equivalent Electrical Models for Supercapacitor Energy Storage Systems in Urban Rail Transit Hailiang ZHANG (Beijing Jiaotong University)
ST-16	Integrated Optimization Approach for Train Timetable Rescheduling and Passenger Reassignment under Disruptions in China's High-Speed Railway Pengcheng WEN (Beijing Jiaotong University)

9 AUG (15:50 - 17:20) Chair: T. MATSUMURA

SF-1	Proposal of onboard train localization method based on surrounding structure identification Kensuke NAGAI(The University of Tokyo)
SF-2	Study on Chinese High-speed Railway Rolling Stock Planning Jiaxin NIU (Beijing Jiaotong University)
SF-3	Optimization of the Tilt Control Pattern Considering the Air Insufficiency on Many Curves in Air Spring Car-Body Tilting Control System Hiroya FUJII (Nihon University)
SF-4	Black-box Adversarial Test Generation and Prioritization for Deep Neural Networks Tao HUANG (Beijing Jiaotong University)
SF-5	Improvement methods of transmission characteristics for railway signaling systems using FFT and development of a FPGA-based processing unit Takuto SUZUKI (Nihon University)
SF-6	Model Predictive Thrust Force Control for 3L-NPC Fed Linear Synchronous Motor of Maglev Train Hao DING (Tongji University)
SF-7	Proposal of train control system on commercial cloud services Koudai FUKUDA (Nihon University)
SF-8	Energy Management Strategy Based on Reinforcement Learning and Frequency Decoupling for Fuel Cell Hybrid Powertrain Hongzhe LI (Tongji University)
SF-9	Smart level crossing controller with train moving direction detection function and hardware development using embedded devices Haruki ARAIE (Nihon University)
SF-10	An Intelligent BIM Approach to Foster Rail Bridge Design Zhaoxi MA (Xi'an University of Technology)
SF-11	Track condition management based on in-service vehicle vibration Takuya NAKANO (Nihon University)
SF-12	A Fault Diagnosis Method for Railway Turnout Systems Based on Improved Autoencoder and Data Augmentation Mengyang LI (Xi'an University of Technology)
SF-13	Analysis of Braking Patterns Considering Delays in Moving Block Systems Using Simulation Shunichi SATO (Nihon University)
SF-14	A robust multi-objective optimization framework for rail profiles considering uncertainty Jun LAI (Southwest Jiaotong University)
SF-15	Faults and Disturbances Identification in Co-Phase Power Supply System Bingxu ZHU (Southwest Jiaotong University)
SF-16	Analysis of Low Frequency Oscillation in Co-phase Power S0upply Systems Feifan LIU (Southwest Jiaotong University)
SF-17	Study on the mechanism of fatigue crack initiation in rail steels considering crystalline plasticity at micro-nano scale Kai WANG (Southwest Jiaotong University)