

# TRC, The Think Tank for Transportation Innovations

# TRANSPORTATION RESEARCH CONGRESS 2025

Sustainability · Resilience · Intelligence

July 20-23, 2025
Beijing International Convention Center, Beijing, China https://www.trc-c.org/



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## Welcome

We are pleased to welcome you to the TRC2025.

The Transportation Research Congress (TRC) aims to be a "Think Tank for Transportation Innovations" and provide an international platform for academic exchange. It was established in 2016 and held its first session the same year. The TRC has been successfully held for three sessions so far with support from colleagues worldwide.

The 4th session of TRC is hosted by the National Center for Materials Service Safety, University of Science and Technology Beijing and held at Beijing International Convention Center, Beijing, China. TRC2025 focuses on the sustainability, resilience, and application of artificial intelligence in transportation systems. The topics cover both traditional fields and crosscuttings, involving highways, railways, airports, water transport, traffic management, and intelligent driving. We anticipate that TRC2025 will elucidate systematic perspectives on research frontiers in transportation infrastructure and systems through scholarly exchange.

We deeply appreciate your contributions to collaborations and innovations that advance sustainable, resilient, and intelligent transportation systems, fostering globally integrated connectivity.

The Organizing Committee of TRC2025

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- ♦ David Cebon, University of Cambridge, Professor, Fellow of the Royal Academy of Engineering
- → Jianguo Nie, Tsinghua University, Professor, Academician of the Chinese Academy of Engineering, International Fellow of the Engineering Academy of Japan
- ♦ Wei Wang, Southeast University, Professor
- → Jianlong Zheng, Changsha University of Science and Technology, Professor, Academician of the Chinese Academy of Engineering
- Hehua Zhu, Tongji University, Professor, Academician of the Chinese Academy of Engineering

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- Chunsheng Cai, Southeast University, Professor
- ♦ David Cebon, University of Cambridge, Professor, Fellow of the Royal Academy of Engineering
- ♦ Baoshan Huang, The University of Tennessee, Knoxville, Edwin G. Burdette Professor
- ♦ Jianming Ling, Tongji University, Professor, Dean of the College of Transportation
- ♦ Guowei Ma, Hebei University of Technology, Professor, Vice President
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- ♦ Haopeng Wang, University of Liverpool, Lecturer
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- ♦ Li Wang, Hebei University of Technology, Professor
- ♦ Yue Xiao, Chang'an University, Professor
- → Jie Xu, Tianjin University, Professor

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- ♦ Min Yang, Southeast University, Professor
- Yuyou Yang, China University of Geosciences Beijing, Professor
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- ♦ Qingzhao Zhang, Tongji University, Associate Professor
- ♦ Yuqing Zhang, Southeast University, Professor
- ♦ De Zhao, Southeast University, Associate Professor
- ♦ Guanyi Zhao, University of Science and Technology Beijing, Engineer
- ♦ Kang Zhao, Liaoning University of Technology, Assistant Professor
- ♦ Qian Zhao, China Railway Design Corporation, Postdoctoral Research Fellow
- ♦ Zhengfeng Zhou, Southwest Jiaotong University, Professor

# **Program at a Glance**

	July 20, 2025		
8:30-22:00	Registration		
	July 21, 2025		
8:30-9:00	Opening Ceremony		
9:00-10:10	Plenary Session 1: Keynote Speech		
10:10-10:30	Coffee Break		
10:30-12:15	Plenary Session 2: Keynote Speech		
12:15-13:30	Lunch		
13:30-15:20	Parallel Sessions (10 Tracks)		
15:20-15:40	Coffee Break		
15:40-17:30	Parallel Sessions (10 Tracks)		
17:30	Dinner		
July 22, 2025			
8:30-9:40	Plenary Session 3: Keynote Speech		
9:40-10:00	Coffee Break		
10:00-11:10	Plenary Session 4: Keynote Speech		
11:10-12:00	Plenary Session 5: Lifetime Achievement Award Ceremony and Panel Discussion		
12:00-12:15	Plenary Session 6: Welcom from the Next TRC		
12:15-13:30	Lunch		
13:30-15:20	Parallel Sessions (10 Tracks)		
15:20-15:40	Coffee Break		
15:40-17:30	Parallel Sessions (10 Tracks)		
17:30	Dinner		
	July 23, 2025		
8:30-11:00	Visit the National Center for Materials Service Safety		

# **Main Venue Arrangements**

#### **Opening Ceremony**

July 21, 2025, 8:30-9:00, Convention Hall No. 3

Moderator: Yinghao Miao, Professor, University of Science and Technology Beijing

Date	Time	Speech
	8:30-8:40	Welcome Speech Renshu Yang, Professor, President, University of Science and Technology Beijing
July 21, 2025	8:40-8:50	Introduction of the National Center for Materials Serivce Safety (NCMS)  Xiaolu Pang, Professor, Director of NCMS, University of Science and Technology Beijing
	8:50-9:00	Introduction of TRC Linbing Wang, Professor, University of Georgia

#### **Plenary Session 1**

July 21, 2025, 9:00-10:10, Convention Hall No. 3

Moderator: Baoshan Huang, Edwin G. Burdette Professor, The University of Tennessee, Knoxville Ya Wei, Professor, Tsinghua University

	Date	Time	Speech
	July 21,	19:00-9:55	Keynote Speech: Heavy Goods Vehicle Safety, Productivity and Environmental Impact David Cebon, Professor, Fellow of the Royal Academy of Engineering, University of Cambridge
2025	9:35-10:10	Keynote Speech: New Concept of Long-Life Pavement Design Lijun Sun, Professor, Tongji University	

#### **Plenary Session 2**

July 21, 2025, 10:30-12:15, Convention Hall No. 3

Moderator: Chunsheng Cai, Professor, Southeast University Danhui Dan, Professor, Tongji University

Date	Time	Speech
	10:30-11:05	Keynote Speech: 3D Printing Oriented New Construction Technology, Material, and Structure Guowei Ma, Professor, Vice President, Hebei University of Technology
July 21, 2025	11:05-11:40	Keynote Speech: Dynamics of Airport Runway System and Its Application Jianming Ling, Professor, Dean of the College of Transportation, Tongji University
	11:40-12:15	Keynote Speech: Road Ice/Snow Disaster Prevention and Mitigation Yiqiu Tan, Professor, President of Harbin Institute of Technology, Weihai, Harbin Institute of Technology

# **Main Venue Arrangements**

#### Plenary Session 3

July 22, 2025, 8:30-9:40, Convention Hall No. 3

Moderator: Yanjun Qiu, Professor, Southwest Jiaotong University

Yuhong Wang, Professor, The Hong Kong Polytechnic University

Date	Time	Speech
July 22, 2025	8:30-9:05	Keynote Speech: Discussion and Practice on Several Issues in Intelligent Construction of Tunnel Engineering Hehua Zhu, Professor, Academician of the Chinese Academy of Engineering, Tongji University
	9:05-9:40	Keynote Speech: Recycling Applications in Asphalt Pavements Baoshan Huang, Edwin G. Burdette Professor, The University of Tennessee, Knoxville

#### Plenary Session 4

July 22, 2025, 10:00-11:10, Convention Hall No. 3

Moderator: Wenqi Ding, Professor, Tongji University

Xueyan Liu, Delft University of Technology, Associate Professor

Date	Time	Speech
July 2	10:00-10:35	Keynote Speech: Research Prospects and Reflections toward Intelligent Bridges Chunsheng Cai, Professor, Southeast University
2025	10:35-11:10	Keynote Speech: Multiscale Simulative Testing for Performance and Fundamental Properties of Asphalt Pavements and Materials Linbing Wang, Professor, University of Georgia

#### Plenary Session 5

July 22, 2025, 11:10-12:00, Convention Hall No. 3

Moderator: Linbing Wang, Professor, University of Georgia

Yiqiu Tan, Professor, President of Harbin Institute of Technology, Weihai, Harbin Institute of Technology

Date	Time	Lifetime Achievement Award Ceremony and Panel Discussion
July 22,	11:10-11:25	Lifetime Achievement Award Ceremony
2025	11:25-12:00	Panel Discussion: Future Transportation

#### Plenary Session 6

July 22, 2025, 12:00-12:15, Convention Hall No. 3

Moderator: Linbing Wang, Professor, University of Georgia

Date	Time	Welcome from the Next TRC
July 22, 2025	12:00-12:15	Welcome from the Next TRC

# **Parallel Session Arrangements**

#### **Parallel Session A1**

July 21, 2025, 13:30-15:20, Room 303

Topic: High-Performance Materials and Innovative Structural Technologies for Underground Engineering Applications

Chair: Peng Feng, Professor, Tsinghua University; Wenqi Ding, Professor, Tongji University; Xinmiao Meng, lecturer, Beijing Forestry University; Qing Chen, Professor, Tongji University

Date	Time	Speech
	13:30-13:47	Progress in Technology and Application of Fiber-Reinforced Polymer Composite Materials for Underground Engineering Structures Peng Feng, Professor, Tsinghua University
	13:47-14:04	Enhancing Load-Bearing Capacity of Shield Tunnels with Fiber-Reinforced Polymers Hai Fang, Professor, Nanjing Tech University
21-Jul	14:04-14:21	New Supporting Technology, Theory and Computational Method of Corrugated Steel for Tunnels Wenqi Ding, Professor, Tongji University
	14:21-14:38	Multi-scale Simulation and Regulation of UHPC Material Properties Qing Chen, Professor, Tongji University
	14:38-14:55	Experimental Investigation of Coal Gangue Aggregate Concrete Confined by FRP Jiaqi Yang, Associate Professor, China University of Mining and Technology (Beijing)
	14:55-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session A2

July 21, 2025, 15:40-17:30, Room 303

Topic: Basic Theory of Resilience of Deep Underground Space in Mega-Cities

Chari: Dong Su, Professor, Shenzhen University; Yafei Qiao, Associate Professor, Tongji University; Chao Zhang, Professo, Hunan University; Mingyang Wang, Professor, Tsinghua University

Date	Time	Speech
21-Jul	15:40-15:57	Interaction Mechanisms and Control Strategies for Soil-Bentonite-Water Systems in Subaqueous Large-Diameter Shield Tunnels Dalong Jin , Associate Professor, Beijing Jiaotong Univeristy
	15:57-16:14	Evolution of Dynamic Axial Compression Ratio and Seismic Behavior of Central Columns in Subway Stations Peng Deng, Professor, Hunan University
	16:14-16:31	Mechanics/Resilience- Intelligence-Carbon study of Prefabricated Underground Structures Tong Qiu, Distinguished researcher, Shenzhen University
	16:31-16:48	Mechancial Response of Cross-Fault Tunnels under Faulting Yafei Qiao, Professor, Tongji University
	16:48-17:05	Damage Assessment of Tunnel Segmental Linings under Internal Explosion Senerios: A Simplified Approach Omer Javaid, Postdoc, Shenzhen University
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session B1

July 21, 2025, 13:30-15:20, Room 305A

Topic: Key Technologies for Emergency Repair and Rapid Traffic Resumption in Railway Infrastructure

Chair: Xianfeng Liu, Professor, Southwest Jiaotong University

Cochair: Hui Li, Professor/Changjiang Scholar, Tongji University

Date	Time	Speech
21-Jul	13:30-13:43	Geological Hazards: Data, Mechanisms, Technologies, and Applications Chong Xu, National Institute of Natural Hazards, Ministry of Emergency Management of China
	13:43-13:56	Key Technologies for Digital Intelligence-Empowered Resilience Enhancement of Highways Ning Xie, Professor, China Academy of Information and Communications Technology
	13:56-14:09	Tornado-induced Risk Analysis of Railway System Considering the Correlation of Parameters Cheng Yang, Associate Professor, College of Civil Engineering, Southwest Jiaotong University
	14:09-14:22	Research on the Mechanism of Landslide Disasters on In-service Highway Embankments Induced by Extreme Rainfall Based on Large-scale Geotechnical Centrifuge Tests Chongqiang Zhu, Professor, Tongji University
	14:22-14:35	Key Technologies for Emergency Repair and Rapid Restoration of Road Infrastructure Hui Li, Professor, Tongji University
	14:35-14:48	Design Methods for Key Materials Improving Resilience of Transportation Infrastructure Cong Ma, Associate professor, Shenzhen University
	14:48-15:01	Principles and Methods for Geological Disaster Emergency Rescue Yonggang Cheng, Professor-Level Senior Engineer, Sichuan Urban and Rural Development Design Company
	15:01-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session B2

July 21, 2025, 15:40-17:30, Room 305A

**Topic: Artificial Intelligence for Smart Construction and Maintenance** 

Chair: Danhui Dan, Professor, Tongji University

Cochair: Liangfu Ge, Research Assistant Professor, The Hong Kong Polytechnic University; Qianqing Wang, Postdoctoral Fellow, École polytechnique fédérale de Lausanne (EPFL);

Xuewen Yu, Postdoctoral Fellow, Nanyang Technological University

Date	Time	Speech
21-Jul	15:40-15:57	Exploration Application of AI Technology in the Analysis of Bridge Structure Health Monitoring Data Zhang Yufeng, Chief Engineer, JSTI Group
	15:57-16:14	AI-Empowered Intelligent Bridge Construction and Maintenance: R&D and Practice of the "Qiaotoubao" Platform Jiwei Zhong, Deputy director, State Key Laboratory of Bridge Intelligent and Green Construction
	16:14-16:31	Development of Noncontact Sensing Technologies for Construction Quality Inspection of Bridges  Yongding Tian, Associate Professor, Southwest Jiaotong University
21-Jul	16:31-16:48	Construction of Bridge Cluster Monitoring and Governance Platform with Cross-Platform Multi-Tier Networking Technology Xin Yan, Professor, Highway Research Institute of the Ministry of Transport
	16:48-17:05	Smart and Real-time Urban Built-Environment Scanning Framework via Fusion of Mobile Robotic Sensing and Deep learning Liangfu Ge, Associate Professor, The Hong Kong Polytechnic University
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session C1

July 21, 2025, 13:30-15:20, Room 305B

Topic: Artificial Intelligence Empowered Theory and Methods in Bridge Engineering

Chair: Bin Xu, Lecturer, Zhengzhou University

Cochair: Fei Han, Associate Professor, Northwestern Polytechnical University;

Liangfu Ge, Research Assistant Professor, The Hong Kong Polytechnic University;

Xuewen Yu, Postdoctoral Fellow, Nanyang Technological University;

Danhui Dan, Professor, Tongji University

Date	Time	Speech	
21-Jul	13:30-13:50	AI- Driven Structural Operation Status and Service Performance Monitoring Method Jun-Qing Lei, Professor, Beijing Jiaotong University	
	13:50-14:10	Application of 3D Laser Scanning Technology in Bridge Construction Dong Liang, Professor, Hebei University of Technology	
	14:10-14:30	Fatigue Crack Detection and Localization in Steel Box Girder using Point Cloud and Image Fusion Machine Vision Yufei Liu, Associate Research Professor, Tsinghua University.	
	14:30-14:50	On-Line Damage Detection in Cables of Cable-Stayed Bridges from Ambient Acceleration Bin Xu, Lecturer, Zhengzhou University	
	14:50-15:20	Questions & Answers, Discussion	

#### 15:20-15:40 Coffee Break

#### Parallel Session C2

July 21, 2025, 15:40-17:30, Room 305B

Topic: Bridge Health Monitoring and Intelligent Operation and Maintenance

Chair: Xiaodong Song, Associate Professor, Southeast University Cochair: Shizhi Chen, Associate Professor, Chang'an University

Date	Time	Speech
21-Jul	15:40-16:00	Computer Vision Based Bridge Surface Damage Recognition Under Limited Supervision Yang Xu, Associate Professor, Harbin Institute of Technology
	16:00-16:20	Eliminating the Effects of Temperature and Vehicle Interference on Modal Frequency Identification Based on Autoencoders with Particle Swarm Optimization Backpropagation Xiaodong Song, Associate Professor, Southeast University
	16:20-16:40	Bridge Operational Modal Analysis Considering Excitation Variations Yichen Zhu, Associate Professor, Southeast University
	16:40-17:00	Dynamic Characterization Model of Lateral Coordination Performance for Prefabricated Beam Bridges Based on Vehicle-induced Response Mapping Analysis Gan Yang, Lecturer, Chang'an University; Shizhi Chen, Associate Professor, Chang'an University
	17:00-17:30	Questions & Answers, Discussion

# **Parallel Session D1**July 21, 2025, 13:30-15:20, Room 305C

**Topic: Intelligent Transportation and Smart Highway** 

Chair: Songtao Lv, Professor, Changsha University of Science and Technology Cochair: Wei Hao, Professor, Changsha University of Science and Technology

Date	Time	Speech
	13:30-13:45	New Advances in Digital Simulation Technology for Urban Transportation Systems:  Development of the TranStar Traffic Large Model  Wei Wang, Professor, Southeast University
	13:45-14:00	Intelligent Road Markings for Radar Perception and Sructure Monitoring Dawei Wang, Professor, Harbin Institute of Technology
	14:00-14:15	Conductive and Wave-absorptive Asphalt Pavement Based on Nano-Carbon Coating of Aggregate Zhen Leng, Professor, The Hong Kong Polytechnic University
21-Jul	14:15-14:30	Digital-Driven and AI-Powered: Key Technologies and Practical Explorations in the Operational Transformation of Capital Highways  Hao Sun, Deputy General Manager, Yunxingyu Traffic Technology LTD., Beijing, China
	14:30-14:45	Key Technologies for Smart Road Construction, Operation and Maintenance Dongdong Ge, Professor, Changsha University of Science and Technology
	14:45-15:00	Low-Cost and High-Performance Digital Twin Technology for Highways Wei Hao & Kefu Yi, Changsha University of Science and Technology
	15:00-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session D2

July 21, 2025, 15:40-17:30, Room 305C

Topic: Autonomous Driving and Vehicle-Infrastructure Cooperation

Chair: Daxin Tian, Professor, Beihang University

Cochair: Chunmian Lin, Assistant Professor, Beihang University

Date	Time	Speech
	15:40-15:55	The Vehicle-Road-Cloud Integrated Sensing, Communication, and Control System (VRC-ISCC)  Jianshan Zhou, Associate Professor, Beihang University
	15:55-16:10	Building World Models for Autonomous Driving from the Perspective of Reducing Uncertainty Chen Min, Research Assistant, Institute of Computing Technology, Chinese Academy of Sciences
21-Jul	16:10-16:25	Research and Application of Key Technologies for Intelligent Perception in Urban Rail Trains Zhangyu Wang, Associate Professor, Beihang University
	16:25-16:40	Intellicise Machine Network for Vehicle-Road Collaboration Guiyang Luo, Associate Professor, Beijing University of Posts and Telecommunications
	16:40-16:55	Research on 3D Perception Technologies Driven by Representation Decoupling Xiaoyan Li, Assistant Professor, Beijing University of Technology
	16:55-17:10	Multi-sensor Fused Perception for Networked Autonomous Driving Chunmian Lin, Assistant Professor, Beihang University
	17:10-17:30	Questions & Answers, Discussion

#### Parallel Session E1

July 21, 2025, 13:30-15:20, Room 305D

**Topic: Intelligent Pavement Condition Inspection & Maintenance** 

Chair: You Zhan, Associate Professor, Southwest Jiaotong University Cochair: Aonan Zhang, Professor, Southwest Jiaotong University

Date	Time	Speech
21-Jul	13:30-13:47	Automated Pavement Distress Detection using an Anchor-free Vision Transformer Hongren Gong, Professor, Tongji University
	13:47-14:04	High-Precision Real-Time Intelligent Detection of Pavement Distresses Aonan Zhang, Professor, Southwest Jiaotong University
	14:04-14:21	Stress Controlled Release Capsules for Asphalt Self-healing Quantao Liu, Professor, Wuhan University of Technology
	14:21-14:38	Intelligent Recognition of GPR Road Hidden Defect and Pipeline Images Based on Feature Fusion and Attention Mechanism Zepeng Fan, Associate Professor, Harbin Institute of Technology
	14:38-14:55	Intelligent Computational Methods for Pavement Performance Evaluation and Maintenance Decision-Making You Zhan, Associate Professor, Southwest Jiaotong University
	14:55-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session E2

 $July\,21,\,2025,\,15{:}40{-}17{:}30,\,Room\,305D$ 

Topic: Pavement Skid Resistance Monitoring and Enhancement Technologies

Chair: Dawei Wang, Professor, Harbin Institute of Technology Cochair: Hongzhou Zhu, Professor, Chongqing Jiaotong University

Date	Time	Speech
21-Jul	15:40-15:57	Theoretical Methods and Applications for Characterizing Asphalt Pavement Surface Texture Xinglin Zhou, Professor, Wuhan University of Science and Technology
	15:57-16:14	Macroscopic Analysis of the Contributions of Asphalt and Aggregates to Pavement Skid Resistance Lingyun Kong, Professor, Chongqing Jiaotong University
	16:14-16:31	Investigation of Pavement Skid Resistance Contact Characteristics Using Pressure- Sensitive Film Technology Zhi Li, Associate Professor, South China University of Technology
	16:31-16:48	Key Technologies for Pavement Icing Monitoring, Early Warning, and Proactive Response Assurance Tao Wen, Professorate Senior Engineer, Research Institute of Highway Ministry of Transport
	16:48-17:05	Research and Application Development of High-Precision 3D Pavement Texture Super- Resolution Reconstruction and Skid Resistance Evaluation Methods You Zhan, Associate Professor, Southwest Jiaotong University
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session F1

July 21, 2025, 13:30-15:20, Room 305E

**Topic: New Technologies in Cement Concrete Pavement** 

Chair: Ya Wei, Professor, Tsinghua University;

Co-Chair: Yalin Liu, University of Science and Technology Beijing

Date	Time	Speech
	13:30-13:47	Intelligent Construction of Cement Concrete PavementIntegrating Modern Slipform Machinery with Advanced Cement Concrete Material Science Zhi Fu, Research Professor, Research Institute of Highway, Ministry of Transport
	13:47-14:04	Weak Form Quadrature Element Analysis of Cracked Thin Plates Hongzhi ZHONG, Professor, Tsinghua University
21-Jul	14:04-14:21	Multi-objective Optimization, Enhancement Mechanism and Engineering Applications of High Performance Porous Concrete Mulian Zheng, Professor, Chang'an University
	14:21-14:38	A Preliminary Exploration of Several Technical Issues in Road Maintenance Qun Yang, Professor, Tongji University
	14:38-14:55	Experimental and Numerical Simulation Studies of Electrical Resistance of Cementitious Materials under Varying Temperature History Siming Liang, Associate Professor, Sun Yat-Sen University
	14:55-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session F2

July 21, 2025, 15:40-17:30, Room 305E

Topic: Deterioration Behavior and Durability Enhancement Technologies of Cement Concrete Pavement

## Chair: Zhengfeng Zhou, Associate Professor, Southwest Jiaotong University

Date	Time	Speech
21-Jul	15:40-15:57	Dynamic Mechanical Response of Full-Scale Pavement Structures under Heavy Loading Qinglong You, Associate Professor, Chang'an University
	15:57-16:14	Damage-Fracture Model for Cement Concrete Zhengfeng Zhou, Professor, Southwest Jiaotong University
	16:14-16:31	Evaluation and Improvement Directions for ACR-PCR of Airport Cement Pavement Bearing Capacity Lukuan Ma, Associate Professor, Civil Aviation University of China
	16:31-16:48	Extension and Conversion of Technical Condition Evaluation System for Road Structures Cong Li , Professor, Guilin University of Electronic Technology
	16:48-17:05	Yield Criterion of High-Performance Porous Concrete Guanglei Qu, Chang'an University
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session G1

July 21, 2025, 13:30-15:20, Room 310

Topic: Sustainability and Resilience for Road Infrastructure-1

Chair: Hui Li, Professor, Tongji University;

Co-Chair: Cong Ma, Professor, Tongji University

	Co-Chair. Cong 1914, 1 Tolessor, Tongji Omversity		
Date	Time	Speech	
21-Jul	13:30-13:47	Trenchless Resilient Rehabilitation Technology for Deep-Seated Road Defects Yanhui Zhong, Professor, Zhengzhou University	
	13:47-14:04	China Communications Construction Company's exploration and practice of green and low-carbon development Fan Zhang, Professor-level Senior Engineer/Deputy Director of the Green and Low-carbon Development Research Center, China Communications Construction Company	
	14:04-14:21	Construction, practice, development and prospects of green transportation standard system  Ji Wang, Associate Researcher, Standard and Metrology Research Center, Institute of Science and Technology of the Ministry of Transport	
	14:21-14:38	The impact of high-impact weather on transportation under the background of climate change Hongbin Wang, Professor-level Senior Engineer, Nanjing Innovation Institute for Atmospheric Sciences	
	14:38-14:55	Research and Practice on Green and Low-Carbon Preventive Maintenance Technology for Asphalt Pavements of Shanxi Expressways Hengji Zhang, Senior Engineer/Senior Specialist, STHG Technology Transformation Co.,Ltd.	
	14:55-15:20	Questions & Answers, Discussion	

### 15:20-15:40 Coffee Break

#### Parallel Session G2

 $July\,21,\,2025,\,15{:}40{-}17{:}30,\,Room\,310$ 

Topic: Sustainability and Resilience for Road Infrastructure-2

Chair: Hui Li, Professor, Tongji University;

Co-Chair: Cong Ma, Professor, Tongji University

Date	Time	Speech
21-Jul	15:40-16:00	Large-scale model-driven disaster warning of transportation infrastructure Bowen Du , Professor, Beihang University
	16:00-16:20	Exploration of Integrated Space-Air-Ground Monitoring and Early Warning Technology for Transportation Infrastructure Safety  Zhongqi Shi, National Science and Technology Institute of Urban Safety Development
	16:20-16:40	Perception and Practice of Highway Abnormal Event Detection and Early Warning Yandong Zhao, Associate research fellow, Intelligent Road Cloud Transportation Science & Technology Company
	16:40-17:00	Ecology and resilience of transportation infrastructure: theory and practice Hui Li, Professor, Tongji University
	17:00-17:30	Questions & Answers, Discussion

#### Parallel Session H1

July 21, 2025, 13:30-15:20, Room 311A

Topic: Low-carbon and Durable Polyurethane-based Paving Materials and Technology

Chair: Shifa Xu, Professor, Beijing University of Civil Engineering and Architecture

Date	Time	Speech
		Noise-Reducing Polyurethane Porous Elastic Mixture: Development, Water Stability, and
	13:30-13:50	Aging Resistance
		Bingye Han, Associate Proferssor, Beijing University of Civil Engineering and Architecture
		Effect of the Thermal-Oxidative Aging on the Road Performance and Noise Reduction
	13:50-14:10	Ability of Polyurethane Porous Elastic Road Surface
		Hongjiu Liu, Southeast University Research Institute Of Highway Ministry Of Transport
21-Jul		The Performance and Application Prospect of Polyurethane Modified Asphalt Reclaimed
	14:10-14:30	Pavement with 100% RAP
		Bin Hong, Professor, Hohai University
	14:30-14:50	Development and Typical Application of Polyurthane Based Paving Material
		Zhanghui Li, Ph.D., Beijing University Of Civil Engineering And Architecture
	14:50-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session H2

July 21, 2025, 15:40-17:30, Room 311A

Topic: Challenges of Multi-physics Service Environments on Asphalt Pavement

Chair: Wentao Wang, Assistant Professor, University of Science and Technology Beijing Cochair: Kang Zhao, Assistant Professor, Liaoning University of Technology

Date	Time	Speech
21-Jul	15:40-15:55	Functional Degradation Prevention of Pavement in Extreme Conditions: Engineering Practices of Cold Paving Technology Peng Xing, Senior engineer, CCCC Infrastructure Maintenance Group Co., Ltd
	15:55-16:10	Application of Asphalt Mixture Recycling Technology Based on Fine Stripping and Screening Xiangyang Fan, Jiangxi Communications Investment Maintenance Technology Group Co., Ltd
	16:10-16:25	Demonstration Project for Comprehensive Application of Recycled Solid Waste Materials in Full-Depth Road Structure Jianfeng Li, Ph.D., Deputy General Manager, Shanxi Road & Bridge Group Test and Detection Center Co., Ltd
	16:25-16:40	Complete Technology for Natural Aging Mechanism and Durability Improvement of Asphalt Pavement in Typical Climatic Regions of Northwest China Shanglin Song, Senior Engineer, Gansu Provincial Highway Development Group Co., Ltd
	16:40-16:55	Effects of Fine RAP Content and Mixing Procedure on Recycled Asphalt Mixture Performance Sudi Wang, Research Assistant, Research Institute of Highway Ministry of Transport, PRC
	16:55-17:10	Influence of Service Environment Concerning Dynamic Water Pressure on Asphalt Pavement Wentao Wang, Assistant Professor, University of Science and Technology Beijing
	17:10-17:30	Questions & Answers, Discussion

#### Parallel Session I1

July 21, 2025, 13:30-15:20, Room 311B

Topic: Next-Generation Resilient Airport Infrastructure: Key Technologies and Future Outlook

#### Chair: Jianming Ling, Professor, Tongji University

Date	Time	Speech
21-Jul	13:30-13:50	Technology for Enhancing Durability and Airworthiness of Airport Runways in Harsh Conditions Jianming Ling, Professor, Tongji University
	13:50-14:10	To Be Available Xinyan Ma, Senior Engineer, Civil Aviation Administration of China Research Base
	14:10-14:30	Construction of a Full-Scale Accelerated Loading Test Platform for Civil Aviation Airport Pavements Lin Qi, Professor, Civil Aviation University of China
	14:30-14:50	Technological Innovation Facilitating Airport Operation Safety Assurance Yubin Xu, Director, China Academy of Civil Aviation Science and Technology
	14:50-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

## Parallel Session I2

July 21, 2025, 15:40-17:30, Room 311B

**Topic: Smart Low-Altitude Transportation Systems: Development Pathways and Frontier Innovations** 

## Chair: Yu Tian, Professor, Tongji University

Date	Time	Speech
21-Jul	15:40-16:00	Development of Intelligent Civil Aviation in the New Generation AI Era Yi Liu, Professor, Civil Aviation Management Institute of China
	16:00-16:20	Innovative Development of Air Transport and Low-Altitude Economy Research Yu Tian, Professor, Tongji University
	16:20-16:40	Challenges and Countermeasure Technologies for Low-Altitude Flight Operations Xianlong Tan, Professor, The Second Research Institute of Civil Aviation Administration of China
	16:40-17:00	To Be Available Yilong Ren, Associate Professor, Beihang University
	17:00-17:30	Questions & Answers, Discussion

#### Parallel Session J1

July 21, 2025, 13:30-15:20, Room 311C

Topic: Highway Geotehnical Engineering Theory and Technology

Chair: Sheqiang Cui, Professor, Shandong University

Date	Time	Speech
21-Jul	13:30-13:47	Cyclic Behaviour of Unsaturated Subgrade Soil Considering Principal Stress Rotation Chao Zhou, Professor, The Hong Kong Polytechnic University
	13:47-14:04	A Data Augmentation and Intelligent Detection Method for Road Diseases Based on 3D Ground Penetrating Radar and Deep Learning Jiong Zhang, Professor, Shandong University
	14:04-14:21	Void Detection between Track Structure and Supporting Layers: Theoretical and Equipment Developmen Bowen Hou, Professor, Beijing Jiaotong University
	14:21-14:38	Recycling of construction waste in earthen cover system for slope stability Haowen Guo, Professor, Harbin Institute of Technology, Shenzhen
	14:38-14:55	Soil Water Migrating under Freezing-Thawing Cycles and Reinforcing-Wicking Integrated Treatment Chuang Lin, Associate Professor, Harbin Institute of Technology
	14:55-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session J2

 $July\,21,\,2025,\,15{:}40{-}17{:}30,\,Room\,311C$ 

Topic: Multi-Scale Performance Enhancement Technologies for Transport Infrastructure

Chair: Xianhua Chen, Professor, Southeast University Cochair: Bo Li, Professor, Lanzhou Jiaotong University

Date	Time	Speech
21-Jul	15:40-15:57	Multi-Index Evaluation of Low-Temperature Performance for Devulcanized Rubber Powder Modified Asphalt and Its Mixtures Bo Li, Professor, Lanzhou Jiaotong University
	15:57-16:14	Asphalt Layers for CRTS of Highspeed Railway Xianhua Chen, Professor, Southeast University
	16:14-16:31	The Real-Time Pavement Distress Detection System Based on Edge-Cloud Collaborative Computing Yucheng Huang, Associate Professor, Soochow University
	16:31-16:48	Design, Preparation, and Performance Study of High-Performance EPS Concrete Ji Yuan, Associate Professor, Taizhou University
	16:48-17:05	Vehicle Load Identification and Pavement Response Monitoring Using Roadside MEMS Accelerometers and Embedded Piezoelectric Sensors Qian Zhao, Post Doctor, China Railway Design Corporation
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session A3

July 22, 2025, 13:30-15:20, Room 303

#### Topic: AI-Powered Smart Roads: Next-Gen Infrastructure and Collaborative Vehicle-Road Ecosystems

#### Chair: Xinyi Zhu, Professor, Tongji University

Date	Time	Speech
22-Jul	13:30-13:47	AI-empowered Smart Sensing Road for Vehicle-Road Collaboration Xinyi Zhu, Professor, Tongji University
	13:47-14:04	Surface Texture Optimization of Prefabricated Pavement Yuhong Wang, Professor, The Hong Kong Polytechnic University
	14:04-14:21	Vehicle Assisted Positioning Method Utilizing Road Signs in Complex Urban Road Environment Zhiguo Zhao, Professor, Tongji University
	14:21-14:38	The Intelligent Traffic Guidance Based on Novel Pavement Markers for The Diversion Areas of Expressways  Bo Yu, Associate Professor, Tongji University
	14:38-14:55	Engineering-adaptive Pavement Maintenance Decision-making Model: a Reinforcement Learning Approach from Expert Feedback Wenyuan Cai, Professor, Tongji University
	14:55-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### **Parallel Session A4**

July 22, 2025, 15:40-17:30, Room 303

#### **Topic: Driver Behavior Characteristics Analysis and Innovative Applications**

## Chair: Xiaohua Zhao, Professor, Beijing University of Technology

Date	Time	Speech
22-Jul	15:40-15:57	Application of Driving Simulation Clusters in Traffic Safety Qingfeng Lin, Associate Professor, Beihang University
	15:57-16:14	Driver Supervisory Attention Management for Automated Vehicle Penghui Li, Associate Professor, Beijing Jiaotong University
	16:14-16:31	Driver-Automation Trust and Cooperative Driving Strategies for Intelligent Vehicles Qingkun Li, Assistant Professor, Institute of Software Chinese Academy of Science
	16:31-16:48	PODAR: A Generalized Vehicle Collision Risk Modeling Framework for Multi-Scenario Applications Chen Chen, Assistant Professor, Beijing University of Technology
	16:48-17:05	Study on the Critical Rollover Conditions of Trucks on Curved Highway Segments Under Sand-Accumulated Road Conditions Based on LSTM Liyi Sun, Master's Candidate, Ningxia University
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session B3

July 22, 2025, 13:30-15:20, Room 305A

**Topic: Intermodal Transport and Smart Logistics** 

Chair: Cheng Cheng, Associate Professor, Southeast University

Cochair: Yong Zhang, Professor, Southeast University

Date	Time	Speech
22-Jul	13:30-13:50	From Nodes to Network: Advancing Integrated Modern Logistics through Intermodal Transport Yongcun Wei, Chief Engineer, Research Institute of Transport Planning, Ministry of Transport
	13:50-14:10	Development Trajectory of Smart Ports: Current Status and Future Prospects Hankun Shi, Senior Engineer, Water Transport Research Institute, Ministry of Transport
	14:10-14:30	Toward Greener Freight: Assessing the Policy Impact of "Modal Shift from Road to Railway" Huiyu Zhou, Professor, Beijing Jiaotong University
	14:30-14:50	A Bilevel Model for Robust Network Design and Biomass Pricing Under Farmers' Risk Attitudes and Supply Uncertainty Qiaofeng Li, Doctor, Beijing Jiaotong University
	14:50-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session B4

July 22, 2025, 15:40-17:30, Room 305A

Topic: Advances in Smart Urban Mobility Technologies

Chair: De Zhao, Associate Professor, Southeast University Cochair: Yu Zhou, Professor, Beihang University

Date	Time	Speech
22-Jul	15:40-15:57	Passenger Flow Sensing and Collaborative Scheduling for Rail Transit Efficiency Lishan Sun, Professor/Dean, Beijing University of Technology
	15:57-16:14	Collaborative Perception for Intelligent Connected Vehicles in Complex Traffic Scenarios Mingfang Zhang, Associate Professor, North China University of Technology
	16:14-16:31	Microscopic Traffic Simulation and Vehicle Motion Optimization Technology in New Mixed Traffic Environments Miaomiao Liu, Associate Professor, Beihang University
	16:31-16:48	Multi-Objective Optimization Design of Transit Network and Operating Frequency - Considering Passengers' Choice Behaviors under Station Congestion Mingzhang Liang, Assistant Professor, Southeast University
	16:48-17:05	Research on Home Autonomous Driving Travel Itinerary Planning and Application Exploration Xiaojing Han, Master's Candidate, Beijing University of Technology
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session C3

July 22, 2025, 13:30-15:20, Room 305B

## Topic: Digital Twin Modelling of Autonomous Road Infrastructures and Environment

## Chair: Yuqing Zhang, Professor, Southeast University

Date	Time	Speech	
22-Jul	13:30-13:47	Digital Twin Enabling Technologies for Advancing Road Engineering and Lifecycle Applications Yu Yan, Professor, Tongji University	
	13:47-14:04	Electrical Characteristics and Damage-Monitoring Performance of Self-Sensing Asphalt Concrete  Yangming Gao, Senior Lecturer, Liverpool John Mores University, UK	
	14:04-14:21	How to Update the Digital Twin? —A Fault Tree Risk Analysis for Pavement Infrastructure Qiao Dong, Professor, Southeast University	
	14:21-14:38	Intelligent Inspection and Digital Management of Airport Pavement Xu Yang, Professor, Chang'an University	
	14:38-14:55	Exploring the Application of Digital Twins in Infrastructure Engineering-improving Asphalt Pavement Construction Chonghui Wang, Lecturer, Aston University, UK.	
	14:55-15:20	Questions & Answers, Discussion	
	15:20-15:40 Coffee Break		

## Parallel Session C4

July 22, 2025, 15:40-17:30, Room 305B

## Topic: Expert Commentary

# Graduate students presentations (8min/presentation)

Data	Time	Spaceh
Date	15:40-16:12	Speech  Development of an Intelligent Detection System for Crown Voids and Air Bubbles in Tunnel Linings Based on Multi-Directional Ultrasonic Sensing Linghui Kong, Tsinghua University
		Research On Structural Design Of Shield Tunnels Under Deep Burial Depth And High Water Pressure Siqi Yang, Hunan University
	13.10 10.12	Multiscale Fracture Mechanics Corrosion Prediction Model of Concrete Based on Nano- and Microscale Parameters from SEM and AFM PF-QNM Huifang Liu, University of Science and Technology Beijing
		Research On Experimental Study And Analytical Theory Of Stress Evolution Around A Tunnel In Reclaimed Unconsolidated Layers Xinxin Yang, Hunan University
22-Jul		Preparation of Low Temperature Rapid Curing Self-Healing Microcapsules Based on Polythiol Jiajia Sheng, University of Science and Technology Beijing
	16:12-16:44	Reinforcement Mechanism and Design Method for Cracked Tunnels Based on Sprayed UHPC Technology Tao Chen, Hunan University
		A Physics-Informed Fuzzy Clustering Prediction Method: A Case Study on Vehicle Weight Identification Based on Pavement Vibration Signals Songli Yang, University of Science and Technology Beijing
		Study on Mechanical Behavior of Ultra High Performance Concrete (UHPC) Filled GFRP Tubular Arch Zhenyuan Yang, Nanjing Tech University
	16:44-17:16	Considering the Influence of the Constitutive Model for Asphalt Concrete and Thermal Expansion Property of Base Material on Pavement Response Longqi Yan, Beijing University of Technology
		Study on Creep Behavior and Prediction Models of Internal Curing UHPC Weichen Fan, University of Science and Technology Beijing
		Acoustic Emission-Based Statistical Modeling of Low-Temperature Damage in Steel Slag and Crumb Rubber Modified Asphalt Mixture Tao Li, Inner Mongolia University of Technology
22-Jul		Experimental Testing and Analysis of Long-term Time-dependent Deformation of Prestressed Ultra-high Performance Concrete Beams Changliang Sun, University of Science and Technology Beijing
	17:16-17:32	Multiscale Modeling and Temperature Field Analysis of Asphalt Pavement Jiahao Bai, University of Science and Technology Beijing
		Data-Driven Inverse Analysis of Axle Loads and Surface Modulus in Asphalt Pavements Using Vibration Measurements Fei Yang, University of Science and Technology Beijing

#### Parallel Session D3

July 22, 2025, 13:30-15:20, Room 305C

**Topic: Performance-Related Material Properties of Asphalt Mixture Components** 

Chair: Haibo Ding, Associate Professor, Southwest Jiaotong University

Cochair: Lei Lyu, Lecturer, Chang'an University

Date	Time	Speech
22-Jul	13:30-13:45	Optimized Asphalt Mix Design Method Based on Viscoelastic Properties Meng Ling, Professor, Beijing University of Civil Engineering and Architecture
	13:45-14:00	Upscaling Prediction of Dynamic Compression Viscoelastic Properties of Asphalt Mortar from Asphalt Mastic Derun Zhang, Associate Professor, Huazhong University Of Science And Technology
	14:00-14:15	Evaluation of Degradation and Cracking Behavior in Hot In-Place Recycled Asphalt Mixtures and Fine Yao Zhang, Associate Professor, Yangzhou University
	14:15-14:30	Application of Corn Straw Biochar in Pavement Asphalt: Suppression of Hazardous Fume Emissions and Maintenance of Rheological Properties  Yiming Li, Associate Professor, Northeast Forestry University
	14:30-14:45	Exploring the Enhancement Mechanisms of Bio-Oils and Crumb Rubber in Asphalt Binders Lei Lyu, Lecturer, Chang'an University
	14:45-15:00	Precipitation and Prediction of Crystalline Components in Asphalt Haibo Ding, Associate Professor, Southwest Jiaotong University
	15:00-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session D4

July 22, 2025, 15:40-17:30, Room 305C

**Topic: Environmental-Friendly Pavement Materials** 

Chair: Yue Xiao, Professor, Chang'an University

Cochair: Quantao Liu, Professor, Wuhan University of Technology; Jiuguang Geng, Associate Professor, Chang'an University

Date	Time	Speech
	15:40-15:57	Mechanisms of Antioxidant Intercalated LDHs on Enhancement Oof Thermal Oxidative and UV Aging Resistances of Asphalt Binder
		Quantao Liu, Professor, Wuhan University of Technology
		Quantification and Deodorization of Emissions from High Content Rubber Modified
	15:57-16:14	Asphalt
		Naipeng Tang, Associate Professor, Chongqing Jiaotong Uviversity
		Mechanism of Zinc Stearate on the Sulfidation Gases from Crumb Rubber Modified
	16:14-16:31	Asphalt
22-Jul		Jiuguang Geng, Associate Professor, Chang'An University
		Research on Data-Driven Decision-Making Technology for Green Pavement Maintenance
	16:31-16:48	and Quantitative Assessment of Carbon Emissions
		Mingwei Yi, Doctor R&D Supervisor, RoadmainT Co., Ltd.
		Micro-Mesoporous Design and Surface Metal Loading of Zeolites for Asphalt VOCs
	16:48-17:05	Emission Reduction
		Xiwen Chang, Lecturer, Chang'An University
	17:05-17:30	Questions & Answers, Discussion

#### **Parallel Session E3**

July 22, 2025, 13:30-15:20, Room 305D

**Topic: Sustainable Cement Materials for Transportation Infrastructure** 

Chair: Qiao Dong, Professor, Southeast University

Date	Time	Speech
22-Jul	13:30-13:45	Fracture Investigation and Acoustic Emission Characteristics of Semi-Flexible Pavement Materials Under Different Temperatures Weiming Song, Associate Professor, Central South University
	13:45-14:00	Study on the Synergistic Stabilization Effect of Solid Waste-Based Cement on Environmental Pollutants Yongjie Ding, Professor, Beijing University of Technology
	14:00-14:15	Magnesium Phosphate Cement Mortar for Rapid Repair on Concrete Pavement in Seasonal Frozen Areas Changjun Zhou, Associate Professor, Dalian University of Technology
	14:15-14:30	Properties of Phosphogypsum-Modified Slope Substrates Shanshan Jin, Associate Professor, Beijing University of Civil Engineering and Architecture
	14:30-14:45	Fluidized Solidification of Red Clay using Multiphase Phosphogypsum-Based Cementitious Material Hao Wu, Professor, Central South University
	14:45-15:00	Nondestructive Evaluation of Concrete Permeability and Enhanced Corrosion Resistance via Surface Treatment Qiao Dong, Professor, Southeast University
	15:00-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### **Parallel Session E4**

July 22, 2025, 15:40-17:30, Room 305D

Topic: 3D Printing Materials Innovation and Technical Research for Civil Transportation Infrastructure

Chair: Jie Xu, Professor, Tianjin University

Cochair: Xue Luo, Professor, Zhejiang University; Wen Xu, Postdoc, Taizhou University

Date	Time	Speech
	15:40-15:57	Research on the Printing Process and Filament Shape of 3D Printing Concrete in Low Gravity Song Han, Professor, Beijing Jiaotong University
22-Jul	15:57-16:14	Research on the Mechanical Behavior of 3D Printed Geopolymer concrete Containing Waste Ceramic  Jie Xu, Professor, Tianjin University
	16:14-16:31	High-Value Utilization and Integration of Structural and Functional Properties of Bulk Solid Waste in 3D Printed Cement-Based Components Yaoyu Wang, Associate Professor, Dalian University
	16:31-16:48	Performance and Design Method of the 3D Printed Concrete Truss Structures Qiang Wang, Lecturer, Hebei University of Technology
	16:48-17:05	Research on Pore Characteristics of 3D Printing Carbon Fiber Reinforced Green Concrete Wen Xu, Lecturer, Taizhou University
	17:05-17:30	Questions & Answers, Discussion

#### Parallel Session F3

July 22, 2025, 13:30-15:20, Room 305E

#### **Topic: Automated solutions for infrastructures**

Chair: Hui Yao, Professor, Beijing University of Technology

Cochair: Hailu Yang, Associate Professor, University of Science and Technology Beijing

Date	Time	Speech
	13:30-13:47	Infrastructure - Artificial Intelligence Yue Liu, Professor, University of Science and Technology Beijing
	13:47-14:04	Moon Road - Artificial Intelligence Feng Li, Professor, Beihang University
22-Jul	14:04-14:21	Hydraulic Engineering - Artificial Intelligence Xiao Sun, Professor, Hohai University
	14:21-14:38	Railway Engineering - Artificial Intelligence Xuhao Cui, Professor, Beijing University of Technology
	14:38-14:55	Image Processing - Artificial Intelligence Huyan Ju, Professor, Chang'an University
	14:55-15:20	Questions & Answers, Discussion
15:20-15:40 Coffee Break		

#### Parallel Session F4

July 22, 2025, 15:40-17:30, Room 305E

# Topic: Expert Commentary

## Graduate students presentations (8min/presentation)

Date	Time	Speech	
	15:40-16:14	Effects of Freeze-Thaw Cycles on Fatigue Performance of Asphalt Mixture and a Fatigue-Freeze-Thaw Damage Evolution Model Xin Li, Inner Mongolia University Of Technology  Effects of Hazardous Spills by Road Accidents on Pavement Texture and its Deterioration Mechanism  Zhenlong Gong, University of Science and Technology Beijing	
		Long-Chain Alkyl Emulsifiers Induced Asphalt Particle Dispersion: Lipophilicity- Enhancement Effect Songxiang Zhu, Chongqing Jiaotong University	
		Investigation of the Topological Characteristics of Force Chain Network in Aggregate Blend Using Discrete Element Method and Complex Network Theory Weixiao Yu, University of Science and Technology Beijing	
22-Jul	16:14-16:48	Cracking Characteristics of Warm-Mix Recycled Fiber Asphalt Mixture under Mode I, Mode III, and Mixed-Mode I/III Based on Acoustic Emission Technology ZhiQiang Liu, Inner Mongolia University of Technology	
		Research on Rutting Prediction Model and Characteristics of Full-scale Asphalt Concrete Pavement Based on Data-Driven Method Pengpeng Li, University of Science and Technology Beijing	
		Study on the Low-Temperature Cracking Characteristics of Warm-Mix Steel Slag and Rubber Powder Modified Asphalt Mixtures Based on Acoustic Emission Technology Die Hu, Inner Mongolia University of Technology	
		Application of Explicit Analysis Methods in Dynamic Response Analysis of Asphalt Pavements under Traffic Loading Xiangrui Han, University of Science and Technology Beijing	
	16:48-17:30	Quantitative Characterization and Stochastic Generation Methods for Three-Dimensional Morphology of Aggregates Yawen Shang, University of Science and Technology Beijing A Study on the Microscopic Contact Characteristics of Tire-Pavement Interaction	
22-Jul		Considering Multiple Factors Yiting Liu, University of Science and Technology Beijing	
507		Multi-source Data Processing and Analysis for Intelligent Compaction of Asphalt Pavements Yingjun Bao, University of Science and Technology Beijing	
		Research on Maintenance Decision-making Method Based on Evaluation Index of Longitudinal Crackson Expressways and Road Surface Material Tests Zhisheng Han, University of Science and Technology Beijing	

#### **Parallel Session G3**

July 22, 2025, 13:30-15:20, Room 310

Topic: Enhancing the Resilience of Bridge Structures to Extreme Events

Chair: Xiaoyi Zhou, Professor, Southeast University

Cochair: Kang Gao, Professor, Southeast University; Rujin Ma, Professor, Tongji University

Date	Time	Speech
	13:30-13:47	A Material-Structure Integrated Design Method for Textile Composite Fire-Resistant Protection of Bridge Structural Cables Subjected to Vehicle-Induced Fires Xiaoyi Zhou, Professor, Southeast University
待定	13:47-14:04	Numerical Investigation into Assessment of Post-Blast Damage to Steel Box Girder Under Vehicle Fire Rujin Ma, Professor, Tongji University
	14:04-14:21	Finite Element Method-Based Data-Driven Multi-Damage Detection Methods for 1D and 2D Bridge Models: Theoretical and Experimental Studies Kang Gao, Professor, Southeast University
	14:21-14:38	Study on Optimal Seismic-Resistant System and Seismic Resilience Enhancement Strategies for Long-Span Self-Anchored Suspension Bridges with Twin Towers and Spatial Cable Planes Hui Qu, Senior Engineer, Tongji Architecture (Design (Group) Co. Ltd.
	14:38-14:55	Effect of Fire Insulation on Fire Performance of the Concrete Beams Strengthened With the CFRP Sheets Pasted by Magnesium Phosphate Inorganic Adhesive Pengfei Ren, Associate Professor, Shandong Jianzhu University
	14:55-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session G4

July 22, 2025, 15:40-17:30, Room 310

Topic: Constructing Green Technology Systems for Road Engineering

Chair: Jiangmiao Yu, Professor, South China University of Technology Cochair: Wanqiu Liu, Professor, Hainan University

Date	Time	Speech
22-Jul	13:30-13:50	Application and Assessment of Eco-Friendly Materials in Tropical Island Road Engineering Wanqiu Liu, Professor, Hainan University
	13:50-14:10	Development on Low-Noise Friction Course with New Thinking & Application Jiangmiao Yu, Professor, South China University of Technology
	14:10-14:30	Synergistic Utilization of Steel Slag Coarse and Fine Aggregates in Asphalt Concrete:  Durability and Life-Cycle Carbon Emission Evaluation  Zongwu Chen, Associate Professor, China University of Geosciences
	14:30-14:50	Analysis of Anti-aging properties of Reactive rejuvenated SBS Modified Bitumen Chengwei Xing, Associate Professor, Chang'an University
	14:50-15:20	Questions & Answers, Discussion

#### **Parallel Session H3**

July 22, 2025, 13:30-15:20, Room 311A

Topic: Workshop of Interdisciplinary Research on Transportation Infrastructure

Chair: Xue Luo, Professor, Zhejiang University

Cochair: Zhen Leng, Professor, The Hong Kong Polytechnic University

Date	Time	Speech
	13:30-13:45	Temperature Correction for Traffic Speed Deflectometer Measurements on Flexible Pavement Using ANN Models Kairen Shen, Ph.D. Candidate, Rutgers University
	13:45-14:00	Research on Internal Structure Image Analysis of Asphalt Mixture and Method of Crack Resistance Performance Design Jiaying Du, South China University of Technology
	14:00-14:15	Field Measurement and Monitoring of Oxygen Concentration in Asphalt Pavements Xingyu Chen, Postdoc, The Hong Kong Polytechnic University
22-Jul	14:15-14:30	Research on Void Clogging Characteristics and Automated Clogging Level Identification Method for Porous Asphalt Pavements Ke Pei, South China University of Technology
	14:30-14:45	Research on Multi-Parameter Errors Model of Backcalculated Modulus Using Abaqus Finite Element Batch Modeling Based on Python Language Chunlong Xiong, , Guangzhou Maritime University
	14:45-15:00	Influence of Bio-oil Molecular Characteristics on Rheological Behavior and Interfacial Adhesion of Rejuvenated Asphalt: A 3D Rendering-assisted Quantitative Evaluation Yefei Wang, South China University of Technology
	15:00-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### Parallel Session H4

July 22, 2025, 15:40-17:30, Room 311A

Topic: Multiscale Mechanics and Data-driven Modelling for Climate Resilient Road Infrastructure and Materials

Chair: Yangming Gao, Senior Lecturer, Liverpool John Moores University Cochair: Fan Gu, Professor, Changsha University of Science & Technology

Date	Time	Speech
22-Jul	15:40-15:55	Porous Road Structure for Urban Flooding Mitigation Yuhong Wang, Professor, The Hong Kong Polytechnic University
	15:55-16:10	Paving Sustainability Under Climate Change: A Systems Perspective Zhi Cao, Professor, Tianjin University
	16:10-16:25	Impacts of Climate Change on Asphalt Pavement Infrastructure Shu Yang, Associate Professor, Hunan University
	16:25-16:40	Urban Road Flood Resilience and Management Yaning Qiao, Associate Professor, China University of Mining and Technology
	16:40-16:55	Preparation of A High Stability-Viscosity-Elasticity Composite Modified Asphalt with Bio- Devulcanized Rubber Powder  Derun Zhang, Associate Professor, Huazhong University of Science and Technology
	16:55-17:10	Effect of Coordination Number of Particle Contact Force on Rutting Resistance of Asphalt Mixture under High Temperature Conditions  Dongyu Niu, Associate Professor, Chang'An University
	17:10-17:30	Questions & Answers, Discussion

#### **Parallel Session I3**

July 22, 2025, 13:30-15:20, Room 311B

Topic: Cutting-Edge AI Techniques for the Future of Civil Engineering

Chair: Fangyu Liu, Professor, Tongji University

Cochair: Xiaojun Li, Professor, Tongji University; Zhoujing Ye, Associate Professor, University of Science and Technology Beijing

Date	Time	Speech
22-Jul	13:30-13:47	Infrared Thermography and Deep Learning for Pavement Distress Detection Fangyu Liu, Professor, Tongji University
	13:47-14:04	Machine Learning and Deep Reinforcement Learning for Asphalt Concrete Mix Design Jian Liu, Assistant Professor, University of Georgia
	14:04-14:21	Exploration and Practice of AI Empowering the Construction Industry Ruifeng Luo, East China Architectural Design & Research Institute Co., Ltd., Huajian Grou
	14:21-14:38	Geological Digital Twin of Tunnel Construction Based on Multi-Source Information Fusion Huaiyuan Sun, Phd student, Tongji University
	14:38-14:55	Research on Trajectory Optimization of Intelligent Arch Trolley Based on Particle Swarm Optimization Ruijia Li, Phd student, Tongji University
	14:55-15:20	Questions & Answers, Discussion

#### 15:20-15:40 Coffee Break

#### **Parallel Session I4**

July 22, 2025, 15:40-17:30, Room 311B

Topic: Round-Table Forum (Future Undeground Space: Resilence, Intelligence and Sustainability)

Chair: Qing Chen, Professor, Tongji University

Cochair: Yafei Qiao, Associate Professor, Tongji University

Date	Time	Guests				
22-Jul	15:40-17:30	Wenqi Ding, Professor, Tongji University				
		Ruifeng Luo, Engineer, East China Architectural Design & Research Institute Co., Ltd., China State Construction Engineering Corporation				
		To be available				
		Welcome to the Round-Table Discussion!				
		Questions & Answers, Discussion				

#### Parallel Session J3

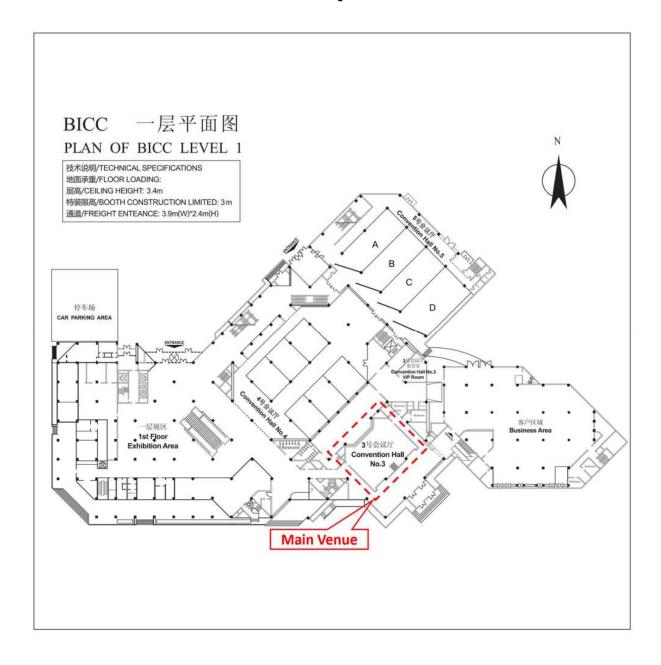
July 22, 2025, 13:30-15:20, Room 311C

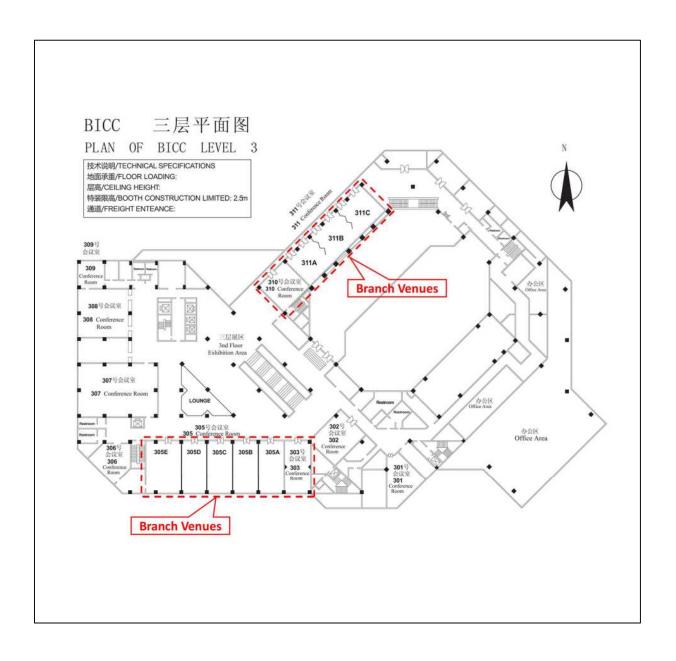
**Topic: Sustainable Solutions for Road Infrastructure Resilience** 

Chair: Feng Ma, Professor, Chang'An University Co-chair: Fang Wang, Professor, Ningxia University

Date	Time	Speech			
22-Jul	13:30-13:47	Study on Long-Term Performance Evolution Patterns and In-Place Hot Recycling Key Technologies for Drainage Asphalt Pavement			
		MingliangLi, Professor, Research Institute of Highway, Ministry of Transport			
	13:47-14:04	Study on the Stability of Emulsified Asphalt with High Asphalt Content and Optimization of its Influencing Factors			
		Lingyun Kong, Professor, Chongqing Jiaotong University			
	14:04-14:21	Risk Assessment and Early Warning for Highway Traffic Safety in Sandstorm Environments Based on Multi-Source Data Fang Wang, Professor, Ningxia University			
	14:21-14:38	Research on Runway Life Based on the Size Effect of Slabs Chunxiang Qi, Associate Professor, Civil Aviation Uniersity of China			
	14:38-14:55	Activation Energy Balanced Design Approach for Recycled Asphalt Binder Blends Jingxian Xu, Ph.D., Zhejiang University			
	14:55-15:20	Questions & Answers, Discussion			
		15:20-15:40 Coffee Break			

# Maps





# **NOTE** ..... ..... ..... .....

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