Final Programme

IABSE Congress Nanjing 2022

Bridges and Structures
Connection, Integration and Harmonisation

21-23 September 2022
Nanjing, China
WELCOME MESSAGE

The IABSE Congress Nanjing 2022 is organized by the Chinese Group of IABSE in co-operation with Tongji University and Southeast University, and is held in Nanjing, one of the metropolises with a 3100-year history that had once been the capital of six dynasties in ancient China.

Bridges and structures are symbols of urban development and expansion. They are not only functional and presentational, but also deeply affect human’s lifestyle. The Congress theme “Bridges and Structures: Connection, Integration and Harmonisation” reflects the influence of the infrastructure development on the evolving cities and city life. The three sub-themes, i.e., Future Trends and Innovations in Material, Design and Construction; Assessment, Strengthening and Management; Sustainability, Durability and Harmonization of Structures with more than 10 topics for each, explain our understanding of the theme from technical point of view.

The congress proceeding includes a printed version with two-page extended abstracts and an electronic version with the full papers available for download. There were 465 accepted abstracts and 281 papers selected by the Scientific Committee for oral presentation during the Congress.

Eight eminent engineers and scholars recommended by the Scientific Committee and the Chinese Group of IABSE will provide Keynote Lectures during the plenary sessions. In addition to the plenary sessions and six parallel sessions, there will also be three special sessions including SS1 (Recent Structures in China), SS2 (Recent Bridges in China) and SS3 (Industrial Session: OVM Technology Forum) in the congress.

The congress is held in a hybrid format. This Final Programme provides a detailed on-site and online arrangement. International delegates who are not able to come to Nanjing in person can attend the congress online. For technical visits, all participants and accompany persons have the privilege to visit two world record-breaking bridges, i.e., Chang-Tai Cable-stayed Bridge with a main span of 1176m and Zhang-Jing-Gao Suspension Bridge with a main span of 2300m.

We thank all our colleagues for their contributions and support to make this congress possible, especially the Scientific Committee members, the experienced staff of IABSE Secretariat, local Professional Conference Organizers, all the members of the Organizing Committee, the Advisory Committee, the Supporting Organisers, and the Sponsors and Exhibitors.

Dong Xu
Naeem Hussain
Co-Chairs, Scientific Committee
IABSE Congress Nanjing 2022

Limin Sun
Gang Wu
Co-Chairs, Organising Committee
IABSE Congress Nanjing 2022

Nanjing, September 2022
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**Bridge Magazine**

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**Jiangsu Provincial Transportation Engineering Construction Bureau**

Yudong Yang

**Bridge Magazine**

Yekai Chen  
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Ling Liao

**Chinese Group of IABSE**

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Shidong Luo  
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Hongtao Li, Zhang-Jing-Gao Bridge Project
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Jun Wang, Jingjiang tunnel Project & Haitai tunnel Project
Guoxing Xia, Jiangsu Provincial Transportation Engineering Construction Bureau
Yang Zhao, Office of Yangtze River Crossing Projects
Chang Zhou, Jiangsu Provincial Transportation Engineering Construction Bureau

THEMES AND TOPICS

Bridges and Structures: Connection, Integration and Harmonisation

Future Trends and Innovations in Material, Design and Construction
- Mega structures (Projects)
- Long span and high-rise structures
- Future structural and functional demands
- Improvements of current codes and standards
- High and ultra-high performance materials
- Advanced experimental testing and techniques
- Advanced numerical models and simulations
- Building Information Modeling in structural engineering
- Innovative construction methods
- Innovative structural devices and products
- Digital technology and fabrication
- Applications of artificial intelligence

Assessment, Strengthening and Management
- Structural health monitoring
- Evaluation and assessment techniques
- Model updating, safety evaluation and reliability forecast
- Innovative inspection techniques
- Maintenance, repair and retrofitting strategies
- Load carrying capacity and remaining lifetime
- Strengthening and repurposing of structures
- Expanding structures service life
- Deconstruction and recycling
- Bridge management systems
- Resilience of structures and cities

Sustainability, Durability and Harmonisation of Structures
- Learning from previous errors: Forensic engineering
- Life-cycle based design
- Reducing risks of earthquakes, wind and other natural hazards
- Reducing risks of fire and other man-made hazards
- Extreme and exceptional loads on structures
- Climate change
- Fatigue and fracture
- Climate change adaptation and disaster resilience
- Environmental risk assessment
- Emission free building of structures
- Aesthetics in structural design
- Arcology
KEYNOTE SPEAKERS

Yeong-Bin Yang
Honorary Dean of School of Civil Engineering, Director of Engineering Vibration and Disaster Prevention Research Center, Chongqing University, China
Title of the Keynote: Vehicle-Bridge Interaction Dynamics

Marc Mimram
Architect-engineer, Professor of Architectural Schools of Marne la Vallée, France
Title of the Keynote: Specific Infrastructures in Relationship with the Landscape

Shunquan Qin
Chairman of China Railway Major Bridge Reconnaissance & Design Institute Co., LTD, China
Title of the Keynote: Long Span Cable-Stayed Bridge Development

Gonzalo Ramos Schneider
Full Professor, Civil and Environmental Engineering Department, Universitat Politècnica de Catalunya – Barcelona TECH (UPC), Spain
Title of the Keynote: Effects of Subsidence Induced by Tunnelling on Buildings: The Sagrada Familia Temple Case

Ho-Kyung Kim
POSCO Chair Professor, Department of Civil and Environmental Engineering, Seoul National University, Korea
Title of the Keynote: Probabilistic Assessment of Vehicle Driving Safety under Strong Winds - Cause Investigations on Two Sea-Crossing Bridges

Stephanos E. Dritsos
Emeritus Professor, University of Patras, Greece
Title of the Keynote: Assessment and Retrofitting of Existing R.C. Buildings - Recent Trends

Bijan Khaleghi
State Bridge & Structures Design Engineer, WSDOT, Bridge & Structures Office. Adjunct Professor, Saint Martin’s University, USA
Title of the Keynote: Seismic and Tsunami Resiliency of Bridges and Transportation Structures

Yaojun Ge
IABSE President, Professor, Department of Bridge Engineering, Tongji University, China
Title of the Keynote: Innovation and Creation of Recent Bridge Development under the Direction of IABSE Outstanding Structure Award

Yeong-Bin Yang
Honorary Dean of School of Civil Engineering, Director of Engineering Vibration and Disaster Prevention Research Center, Chongqing University, China
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CONGRESS GENERAL INFORMATION

Hybrid Format

A hybrid format will be applied. In addition to the conventional congress venue in Nanjing, the international and demotic participants who can not come to the Venue in Nanjing are welcome to join us online with presentations, watch live broadcasts of all Opening and Closing Sessions, all Keynote and Parallel Sessions, and get a free access to the Virtual Exhibition.

Online Platform — OnAIR

This new conference technology features will be applied to formulate a memorable hybrid IABSE Congress. Registered online participants would have the opportunity to explore the 3D congress lobby, utilize the communication function to liaise with all participants, visit all virtual exhibition booths, watch all promotional videos from the sponsors exhibitors, inquire the on-going and upcoming presentations, leave messages to the host, speakers, exhibitors, and conference organisers.

Social Programme

There will be a welcome reception with light refreshment for all onsite participants on the 20th September, and a Gala Dinner on the 22nd September.

YEP Program will be organised on Zoom from 14:00 CEST (GMT+2)

Onsite Registration

Onsite registration is available at the venue lobby area, from 14:00 to 21:00 on September 20. Please find the Congress Secretariat in Room 211 during the Congress from September 21 for registration and other matters.

THE OnAIR PLATFORM

You can log in to the Congress virtual event portal anytime using the details provides to your email address.

To access the IABSE Congress Nanjing 2022 virtual platform, you will not need to download anything to attend and interact, but you will need a stable internet connection, and an internet browser - we would highly recommend you use Google Chrome as your preferred browser to access the platform.

After logging in, there will be a microphone and camera test prompt: below is the page you will see when you test your equipment. After finishing the checks, you can use your browser’s settings to ensure that you’re always asked before the microphone and camera are used.

Please note, if you are behind your business firewall and fail any technical checks, please ensure you speak to your IT support team to whitelist ‘twilio.com’, ‘vonage.com’, ‘aircastcdn.com’, and ‘vimeo.com’.

Log in through both email + pin or the url provided to your email. You will be using this link to enter the congress before, during and after the Congress.

Support on the Day

The virtual platform has a live support desk that you can contact if you face any technical issues or have questions about navigating the website features throughout the event days.

We look forward to seeing you online!
THE OnAIR PLATFORM

These two videos may help you to familiarize with OnAir.

https://vimeo.com/534258390/c5ad8b7dab

https://dyzz9obi78pm5.cloudfront.net/app/image/id/5f88a7cc6e121ce80b38b9ae/n/presenter-explainer-video-aircast-studio-rev2.mp4

For all Participants:

Come to your session and wait for the presenter, feel free to utilize the Q&A, discussion and notes functions.

You can also use the Meeting Hub to find all registered participants.

For all presenters and chairs, your roles are pre-set, when you join in, you are automatically assigned to the AirCast Studio. (There will be an instruction to all presenters and session chairs)

Online technical visits will be ready along with all the online booths in the Exhibition Area and Resources Gallery.

CONGRESS VENUE

Venue: Nanjing Yangtze River International Conference Center

Address: 299 Binjiang Avenue, Pukou District, Nanjing, Jiangsu, China

Locate in Pukou District in Nanjing, Yangtze River International Conference Center are a neofuturism style multifunctional skyscraper, covering a total area of 160,000m². The Welcome Reception, Gala Dinner will also be arranged onsite in its Ballroom.
TRAVEL AND ACCOMMODATION

To the Venue

By public transport
Nanjing Railway Station to the Venue: take Metro Line 1, transfer to Line 2 at the Xinjiekou Station, get off at the Yuan tong Station, and walk 1.7 km. It takes 1 hour.

Nanjing South Railway Station to the Venue: take Metro Line 1, transfer to Line 10 at the An’de’men station, get off at the Yuan tong Station, and walk 1.7 km. It takes 50 minutes.

Nanjing Lukou international Airport (NKG) to the Venue: take Airport Line S1, transfer to Metro Line 1 at the Nanjing South Railway Station, and follow the guide above. It takes about 1.5 hours.

By car or taxi
Nanjing Railway Station to the Venue: A 30-minute drive with a distance of 18 km. Taxi fare: 50 CNY
Nanjing South Railway Station to the Venue: A 15-minute drive with a distance of 11 km. Taxi fare: 40 CNY
Nanjing Lukou international Airport (NKG) to the Venue: A 35-minute drive with a distance of about 40 km. Taxi fare: 130 CNY

Hotel
Yangtze River International Conference Center Hotel (Same place with the Congress Venue)
## Programme At A Glance

### Tuesday, September 20, 2022

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<thead>
<tr>
<th>Beijing Time GMT+8</th>
<th>Activity</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00 - 21:00</td>
<td>On-site Registration</td>
<td>Lobby of Yangtze River International Conference Center</td>
</tr>
<tr>
<td>19:00</td>
<td>Welcome reception</td>
<td>Zhongshan Hall</td>
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</tbody>
</table>

### Wednesday, September 21, 2022

<table>
<thead>
<tr>
<th>Beijing Time GMT+8</th>
<th>CEST GMT+2</th>
<th>Parallel Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Room 201</td>
<td>Room 206</td>
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<tr>
<td></td>
<td>Room 203-1</td>
<td>Room 203-2</td>
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<tr>
<td></td>
<td>Room 203-3</td>
<td>Room 203-4</td>
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<tr>
<td></td>
<td>Room 203-5</td>
<td>Room 203-6</td>
</tr>
</tbody>
</table>

**Room 201**
- SS1: Recent Structures in China
- SS2: Recent Bridges in China
- SS3: Advanced numerical models and simulations - I
- SS4: High and ultra-high performance materials - I
- SS5: Future structural and functional demands - I
- SS6: Reducing risks of earthquakes, wind and other natural hazards - I

**Room 202**
- SS7: Long span and high-rise structures - II
- SS8: High and ultra-high performance materials - II
- SS9: Structural health monitoring - II
- SS10: Future structural and functional demands - II
- SS11: Reducing risks of earthquakes, wind and other natural hazards - II

**Room 206**
- SS12: Coffee Break, Exhibition

### Thursday, September 22, 2022

**Room 201**
- A1: Recent Structures and Megastructures (Projects) - I
- A2: Long span and high-rise structures - II
- A3: Applications of artificial intelligence
- A4: Improvements of current codes and standards
- A5: Model updating, safety evaluation and reliability forecast - I
- A6: Innovative construction methods - I

**Room 202**
- A7: Advanced numerical models and simulations - II
- A8: Load carrying capacity and remaining lifetime
- A9: Innovative construction methods - II
- A10: Innovative structural devices and products - II
- A11: Innovative structural devices and products - II
- A12: Evaluation and assessment techniques - II

**Room 205**
- B1: Evaluation and assessment techniques - III
- B2: Innovative construction methods - I
- B3: Innovative construction methods - I
- B4: Innovative construction methods - I
- B5: Innovative construction methods - I

**Room 203-1**
- B6: Load carrying capacity and remaining lifetime
- B7: Advanced numerical models and simulations - III
- B8: Load carrying capacity and remaining lifetime
- B9: Innovative structural devices and products - III
- B10: Innovative structural devices and products - III

**Room 203-2**
- B11: Innovative structural devices and products - III
- B12: Innovative structural devices and products - III

**Room 203-3**
- B13: Innovative structural devices and products - III

**Room 206**
- B14: Innovative structural devices and products - III

### Plenary Session

**Zhongshan Hall, OnAIR Room #1**

- 14:00 - 8:00: Opening Session
- 14:30 - 8:30: Keynote 1: Vehicle-Bridge Interaction Dynamics
- 15:10 - 9:20: Group Photo, Coffee Break, Exhibition
- 15:30 - 9:30: Keynote 2: Specific Infrastructures in Relationship with the Landscape
- 16:10 - 10:10: Keynote 3: Challenges and Innovations in Design and Construction of Supersized Structural Components for Long Span Bridges
- 16:50 - 10:50: Keynote 4: Effects of Subsidence Induced by Tunnelling on Buildings: The Sagrada Familia Temple case
- 18:00 - 12:00: Buffet Dinner at Manjianglou Restaurant
- 20:00 - 14:00: YEP Event Zoom Online

**JiQing Hall, OnAIR Room #6**

- 14:00 - 8:00: OnAIR Room #1
- 14:30 - 8:30: OnAIR Room #2
- 15:00 - 9:00: OnAIR Room #3
- 15:30 - 9:30: OnAIR Room #4
- 16:00 - 10:00: OnAIR Room #5
- 16:30 - 10:30: OnAIR Room #6
- 17:00 - 11:00: Gala Dinner at JiQing Hall
- 19:30 - 13:30: Gala Dinner at JiQing Hall
### Friday, September 23, 2022

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>A2: Long span and high-rise structures - V</td>
</tr>
<tr>
<td>9:00</td>
<td>A3: Advanced numerical models and simulations - III</td>
</tr>
<tr>
<td>9:30</td>
<td>A4 &amp; C6: Reducing risks of fire and other man-made hazards &amp; Climate Change</td>
</tr>
<tr>
<td>10:00</td>
<td>A5: High and ultra-high performance materials - III</td>
</tr>
<tr>
<td>10:30</td>
<td>B7: Strengthening and repurposing of structures</td>
</tr>
<tr>
<td>11:00</td>
<td>Coffee Break, Exhibition</td>
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<tr>
<td>12:00</td>
<td>Lunch at Manjianglou Restaurant</td>
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#### Plenary Session
Jiqing Hall, OnAIR Room #1

- **14:00** 8:00: **Keynote 5: Probabilistic Assessment of Vehicle Driving Safety under Strong Winds**  
  Ho-Kyung Kim  
  Chairs: Tina Vejrøm, Limin Sun
- **14:40** 8:40: **Keynote 6: Assessment and Retrofitting of Existing R.C. Buildings - Recent Trends**  
  Stephanieos E. Orfopoulos
- **15:20** 9:20: **Keynote 7: Seismic and Tsunami Resiliency of Bridges and Transportation Structures**  
  Bijan Khaleghi
- **16:00** 10:00: Coffee Break, Exhibition

#### A2: Long span and high-rise structures - V

- **8:30** 2:30: Application and Innovation of High Strength Concrete In High Rise Building Structures  
  Congzhen Xiao
- **8:42** 3:42: Long Span Structure Design of Beijing Daxing International Airport Terminal Building  
  Zhongyi Zhu
- **8:54** 3:54: Xiong'an Railway Station: A Supersized Railway Station in High Seismic Intensity Zone  
  Zhong Fan
- **9:06** 4:06: Rapid Design and Construction Management of Emergency Hospital During the COVID-19 Epidemic  
  Liming Yuan
  Jiemin Ding
- **9:30** 4:30: Discussion

#### A3: Advanced numerical models and simulations - III

- **8:30** 2:30: FE Modeling of the Interfacial Behaviour of Precast Multi-Box Girder  
  Juhui Zhang
- **8:42** 3:42: Nonlinear Galloping Analysis of the Main Cable in Construction  
  Tao Li, Wenming Zhang
- **8:54** 3:54: Numerical Analysis of New Prefabricated Cantilever Retaining Walls  
  Wenhao Li
- **9:06** 4:06: Numeric Analysis of Creep Effects on Steel-concrete Composite Structure with Equivalent Temperature Field Method  
  Cunxin Yin
- **9:18** 4:18: Numerical Simulation of Overall Marine Transportation of Bay Bridges under Complex Hydrographic Environment  
  Mu Fang, Wen Xiong
- **9:30** 4:30: Design Method and Finite Element Analysis of Precast Longitudinal Split-Piece Cover Beam  
  Qiamyu Mao
- **9:42** 4:42: Discussion

#### A5: High and ultra-high performance materials - I

- **8:30** 2:30: Experimental Study on Tension Mechanisms of Ultra-High Performance Concrete Link Slab in Jointless Bridge Decks  
  Jianhuo Lin
- **8:42** 3:42: Short Stud Arrangement Effect on Flexural Behavior of Steel-UHPC Composite Decks  
  Han Xiao
- **8:54** 3:54: Thermal Spray Zinc-based Coatings for Protecting Bridges from Corrosion  
  Gang Kang
- **9:06** 4:06: Continuous Galvanized Reinforcement Steel in Concrete Structures  
  Delin Lai
- **9:18** 4:18: Effect of SFRP Composite Deck on Negative Bending Behavior Steel Box Girder  
  Yi Xu
- **9:30** 4:30: Seismic Response Analysis for Engineering Structures Equipped with Double Viscous Damper Toggle Brace System  
  Gang Wang
- **9:42** 4:42: Discussion

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### Wednesday, September 21, 2022 Parallel Sessions, Block 1

#### SS1: Recent Structures in China

- **Room: 201 OnAIR Room #1**  
  Chairs: Congzhen Xiao, Zhi Sun
- **8:30** 2:30: Application and Innovation of High Strength Concrete In High Rise Building Structures  
  Congzhen Xiao
- **8:42** 3:42: Long Span Structure Design of Beijing Daxing International Airport Terminal Building  
  Zhongyi Zhu
- **8:54** 3:54: Xiong’an Railway Station: A Supersized Railway Station in High Seismic Intensity Zone  
  Zhong Fan
- **9:06** 4:06: Rapid Design and Construction Management of Emergency Hospital During the COVID-19 Epidemic  
  Liming Yuan
  Jiemin Ding
- **9:30** 4:30: Discussion

#### A7: Advanced numerical models and simulations - I

- **Room: 206 OnAIR Room #2**  
  Chairs: Debra Laefer, Hongwei Huang
- **8:30** 2:30: FE Modeling of the Interfacial Behaviour of Precast Multi-Box Girder  
  Juhui Zhang
- **8:42** 3:42: Nonlinear Galloping Analysis of the Main Cable in Construction  
  Tao Li, Wenming Zhang
- **8:54** 3:54: Numerical Analysis of New Prefabricated Cantilever Retaining Walls  
  Wenhao Li
- **9:06** 4:06: Numeric Analysis of Creep Effects on Steel-concrete Composite Structure with Equivalent Temperature Field Method  
  Cunxin Yin
- **9:18** 4:18: Numerical Simulation of Overall Marine Transportation of Bay Bridges under Complex Hydrographic Environment  
  Mu Fang, Wen Xiong
- **9:30** 4:30: Design Method and Finite Element Analysis of Precast Longitudinal Split-Piece Cover Beam  
  Qiamyu Mao
- **9:42** 4:42: Discussion

#### A5: High and ultra-high performance materials - I

- **Room: 203-1 OnAIR Room #3**  
  Chairs: Dongzhou Huang, Yongxin Yang
- **8:30** 2:30: Experimental Study on Tension Mechanisms of Ultra-High Performance Concrete Link Slab in Jointless Bridge Decks  
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### Wednesday, September 21, 2022 Parallel Sessions, Block 1

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### Wednesday, September 21, 2022 Parallel Sessions, Block 1

#### B1: Structural health monitoring - I

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<td>Application of Structural Surface Cracks Based on Class Activation Map</td>
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#### A3: Future structural and functional demands - I

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<td>Corresponding Force Matrix: A Bridge Connecting Refined Analysis and Reinforcement Design of Box-section Girders Based on Shells</td>
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<td>Modal Analysis and TMD Design of the Wing-Spread Bridge: A Pedestrian Bridge along the Binjiang Avenue</td>
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#### B3: Reducing risks of earthquakes, winds and other natural hazards - I

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<td>Damage study of Dhamdum bridge concrete Pier by flowing rock impact</td>
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<td>Seismic analysis of high-speed railway irregular bridge-track system under obliquely incident waves</td>
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<td>Seismic Fragility of Double-Deck Curved Girder Bridge Based on Artificial Neural Network and Lasso-Logistic Regression</td>
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<td>8:30</td>
<td>The Modern PU-Based Flexible Plug Expansion Joint for Bridges – Recent Innovations</td>
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<td>Chairs: Kefei Li, Zhihui Zhu</td>
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<td>8:42</td>
<td>Flexible Protection Technology of Bridge Pier against Ship Collision</td>
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<td>Key Technologies of Precast Segment Production for the 4th Ring Transportation Corridor in Zhengzhou, Henan, China</td>
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<td>Study on Mechanical Property of Reticulated Shell Structure Canopy Considering Elevated-effect of Viaduct in High-speed Rail Station</td>
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### A1: Innovative structural devices and products - I

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<td>Key Technologies of Precast Segment Production for the 4th Ring Transportation Corridor in Zhengzhou, Henan, China</td>
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<td>Chairs: Sebastien Maheux, Junling Sun</td>
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<td>The Construction of Hong Kong-Zhuhai-Macao Bridge</td>
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<td>9:06</td>
<td>ShuiYing Bridge – Large Diameter Main Cables</td>
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<td>9:18</td>
<td>ShuiYing Bridge – General Scheme Design Options for Mega Suspension Bridge</td>
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<td>9:30</td>
<td>Archimedes Bridge Underwater of BaiYangDian Lake</td>
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### A2: Long span and high-rise structures - II

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### C3: Reducing risks of earthquakes, wind and other natural hazards - II

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## Thursday, September 22, 2022 Parallel Sessions, Block 3

### B2: Evaluation and assessment techniques - I

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<tr>
<td>8:30</td>
<td>Pixel-level Road Crack Detection and Segmentation Based on Deep Learning</td>
<td>椅子: Chunsheng Wang, Wenbo Gao</td>
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<td>8:42</td>
<td>Experimental study on seismic performance of reinforced concrete columns with longitudinal reinforcing bars connected by flare welding joint subjected to effective re-use of the existing railway structures</td>
<td>椅子: Koji Daigo</td>
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<td>8:54</td>
<td>Research on fatigue vehicle models of Yangtze River Highway Bridge</td>
<td>椅子: Zhilin Lv</td>
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<td>9:06</td>
<td>Quantitative Analysis of the Importance and Correlation of Urban Bridges and Roads in the Study of Road Network Vulnerability</td>
<td>椅子: Qinghua Xiao</td>
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<td>9:18</td>
<td>Parameterized Analysis of Guide Beam in the Incremental Launching Construction of Five-span Steel Box Girder Bridge</td>
<td>椅子: Jinrui Hu</td>
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### A9: Innovative construction methods - I

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<tr>
<td>8:30</td>
<td>Innovative Design and Materials for Seismic Resilient Accelerated Bridge Construction</td>
<td>椅子: Bijan Khaleghi, Yu Zou</td>
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<td>8:42</td>
<td>Study on anchorage type selection of Sichuan Bank of Sichuan Kahalo Jinsha River Bridge</td>
<td>椅子: Qigang Xu</td>
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<td>8:54</td>
<td>In-Situ Test and Simulation of the Web-Self-Supporting Construction for the Composite Bridge with Corrugated Steel Webs</td>
<td>椅子: Haochu Cai</td>
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<td>9:06</td>
<td>Automatic Production Process and Quality Control of Large Bridge Component Factory</td>
<td>椅子: Lei Shi</td>
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<td>9:18</td>
<td>Key Technology for Planning and Construction of Automated Production Lines in Large Bridge Factories</td>
<td>椅子: Jun Song</td>
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<td>9:30</td>
<td>Research on key technology of large torsion steel beam fast sliding positioning</td>
<td>椅子: Xiang Zhang</td>
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### A6: Advanced experimental testing and techniques

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<tr>
<td>8:30</td>
<td>Research on wind field characteristics measured in U-shaped valley at bridge site by Lidar</td>
<td>椅子: Longzheng Xiao, Lin Chen</td>
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<td>8:42</td>
<td>Advances in and Benefits of Rapid Steel Connections</td>
<td>椅子: Jun Wang</td>
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<td>8:54</td>
<td>Analysis of Local Compressive Behaviour of Concrete Bed Under an Embedded Cast Iron Cable Saddle</td>
<td>椅子: Yuan Yuan</td>
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<td>9:06</td>
<td>Investigation on the Unsteady Aerodynamic Force on A 3.2 Rectangular Section Under Accelerating Airflow</td>
<td>椅子: Xiuyu Chen</td>
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<td>Analysis and Optimization of Single Cable Plane Prestressed Concrete Extradosed Cable-stayed Bridge</td>
<td>椅子: Yongqi Liu</td>
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<td>9:30</td>
<td>Analysis on Segmental Deck Replacement Plan for Long-span network arch bridge</td>
<td>椅子: Huiyang Fu</td>
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## Thursday, September 22, 2022 Parallel Sessions, Block 4

### A2: Long span and high-rise structures - III

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<tr>
<td>10:30</td>
<td>Effect of Short-Term Shrinkage on Deck Concrete of a Rail-Cum-Road Composite Truss Bridge</td>
<td>椅子: Dewang Li</td>
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<td>10:42</td>
<td>Analysis on Mechanical Performance of Rail-Cum-Road Double Deck Steel Truss-Arch Composite Bridge</td>
<td>椅子: Bingfei Liu</td>
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<td>10:54</td>
<td>Analysis of Reasonable Longitudinal Restraint System of Four-Tower Cable-Stayed Bridge</td>
<td>椅子: Hui Wang</td>
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<td>11:06</td>
<td>Recent Development and Challenges of Long-Span Railway Cable-Stayed Bridges in China</td>
<td>椅子: Guo Xianghua</td>
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<tr>
<td>11:18</td>
<td>Effect of Concrete Thickness on Fatigue Performance for Rib-to-Diaphragm in Steel-Concrete Orthotropic Composite Decks</td>
<td>椅子: Yu Wu</td>
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### A12: Applications of artificial intelligence

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<tr>
<td>10:30</td>
<td>Long-Term Missing Wind Data Recovery for Bridge Health Monitoring Using Deep Learning</td>
<td>椅子: Zhiwei Wang</td>
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<td>10:42</td>
<td>Intelligent Upgrading and Application of Bridge Video Surveillance System Based on Computer Vision</td>
<td>椅子: Yuan Chen</td>
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<td>10:54</td>
<td>Prediction of Concrete Column Reinforcement Corrosion Degree Under Initial Strain Based on Support Vector Regression</td>
<td>椅子: Tao Hua</td>
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<td>11:06</td>
<td>Aerodynamic Parameter Identification and Flutter Performance Prediction of Closed Box Girder Based on Machine Learning</td>
<td>椅子: Nei Chen</td>
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<td>11:18</td>
<td>Sensitivity-based structural damage identification via response reconstruction</td>
<td>椅子: Yuan Si</td>
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### A4: Improvements of current codes and standards

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<tr>
<td>10:30</td>
<td>Desirable Geometrical Configurations of The Web/Flange Splices for Enhancing the Frictional Slip Resistance of an I-Girder</td>
<td>椅子: Ryo Sakura</td>
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<td>10:42</td>
<td>Buckling Behavior of Stiffened Plates in Concrete-Filled Steel Tubular Bridge Towers</td>
<td>椅子: Lipeng Sun</td>
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<td>10:54</td>
<td>Property Analysis of Link Slab in Long-span Steel-Concrete Composite Bridge</td>
<td>椅子: Liang Xiao</td>
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<td>Experimental Design of Link Slab in Long-span Steel-Concrete Composite Bridge</td>
<td>椅子: Liang Xiao</td>
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<td>Effect of Steel Diaphragms on Girder Performance of Simply Supported T-Girder Bridges with Wide Girder Spacing</td>
<td>椅子: Chang Liu</td>
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<td><strong>B3: Model updating, safety evaluation and reliability forecast - I</strong></td>
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<td>10:30</td>
<td>Computer Vision-based Finite Element Model Updating Method Using Measured Static Data: An Experimental Study</td>
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<td>10:42</td>
<td>Algorithm of the Risk of Ship-Bridge Collision Considering Ship’s Dimension</td>
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<td>Reliability Evaluation of Bridge Fatigue Lifethrough Refined Statistical Analysis of Stochastic Traffic Flow Monitoring Data</td>
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<td>11:06</td>
<td>On the Benefits of Including Modal Strains in FE Model Updating for Damage Assessment</td>
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<td>11:18</td>
<td>Study on the Influence of Bridge Expansion Joints on Vehicle-Track-Bridge System</td>
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<td>Research on the Layout of Temporary Piers of Large-span and Super-width Steel Box Girder during Incremental Launching Construction</td>
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<td><strong>B6: Load carrying capacity and remaining lifetime</strong></td>
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<td><strong>C5: Extreme and exceptional loads on structures - I</strong></td>
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<td><strong>A7: Advanced numerical models and simulations - II</strong></td>
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<td><strong>B4 &amp; C2: Life-cycle based design &amp; Innovative inspection techniques - I</strong></td>
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<tr>
<td><strong>A10 &amp; A8 &amp; A11: Innovative structural devices and products - II &amp; BIM &amp; Digital technology and fabrication</strong></td>
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Thursday, September 22, 2022 Parallel Sessions, Block 5

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<th>Time</th>
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<tr>
<td>14:00</td>
<td>A2 &amp; B3: Long span and high-rise structures - IV &amp; Model updating, safety evaluation and reliability forecast - II</td>
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<tr>
<td>14:12</td>
<td>Nonlinear Coupling in Cable-Supported Bridges for Non-Analogous Modes</td>
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<td>14:24</td>
<td>Conceptual Design of Long-Span Suspension Bridges: Tower Structural Forms</td>
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<td>14:36</td>
<td>Benefits and Challenges of the Twin-box Bridge Girder</td>
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<td>14:48</td>
<td>Crack Control Technology in Construction of V-Shaped Piers of the Main Bridge of China-Maldives Friendship Bridge</td>
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<td>15:00</td>
<td>Vehicle loadings</td>
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<td>15:12</td>
<td>Stress-strain Model Adapted to Bolted Connection in Ultimate Behaviour Considering Energy Absorption</td>
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Thursday, September 22, 2022 Parallel Sessions, Block 6

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<tr>
<td>16:00</td>
<td>A9: Innovative construction methods - II</td>
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<td>16:12</td>
<td>Shrinkage and Fatigue Performance of Novel Post-Combined Steel-UHPC Composite Decks</td>
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<td>16:24</td>
<td>Effectiveness of incomplete welds in nodes of bridge truss girder nodes with hollow core profile members</td>
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<td>16:36</td>
<td>Advancesments in Timber Construction: A Review of Prefabricated Mass Timber Floor Assemblies</td>
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<td>17:00</td>
<td>Innovative Construction Technique of Two Bridges in Hong Kong</td>
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Wednesday, September 21, 2022 Parallel Sessions, Block 6

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<tr>
<td>14:00</td>
<td>B5: Maintenance, repair and retrofitting strategies</td>
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<td>14:12</td>
<td>Numerical Study on Influence of Input Wave’s Frequency on Dynamic Pre-hole Isolation Pile-Soil Interaction in IABs</td>
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<td>14:24</td>
<td>Corrosion suppression effect of bridge cables using environmental isolation paint</td>
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<td>14:36</td>
<td>Fatigue Performance Evaluation of FRP Reinforced Steel Tubular K-Joint</td>
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<td>14:48</td>
<td>A novel method for generating apparent panoramic image of real texture of concrete bridge based on multi-view registration</td>
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<td>15:00</td>
<td>Discussion</td>
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Thursday, September 22, 2022 Parallel Sessions, Block 5

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<tr>
<td>14:00</td>
<td>B2: Evaluation and assessment techniques - II</td>
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<tr>
<td>14:12</td>
<td>Seismic Performance Evaluation of an Existing Vertical Irregularity Reinforced Concrete Building using Nonlinear Time-history Analysis</td>
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<td>14:24</td>
<td>Experimental Investigation on Threshold for Corrosion-to-Fatigue Crack Transition of Corroded Steel Plate</td>
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<tr>
<td>14:36</td>
<td>Probabilistic Corrosion Fatigue Life Evaluation based on Random Field Simulation</td>
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<tr>
<td>15:00</td>
<td>Seismic performance assessment of multi-span continuous railway bridges across a symmetrical V-shaped canyon considering the near-source topographic effect</td>
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<tr>
<td>15:12</td>
<td>Measurement the application of Pre-stressed CFRP laminates using Deep Learning for Computer Vision</td>
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<tr>
<td>17:00</td>
<td>Inspection Information Preprocessing for Regional Bridge Condition Assessment</td>
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Friday, September 23, 2022 Parallel Sessions, Block 7

**C4 & C6: Reducing risks of fire and other man-made hazards & Climate Change**

**Beijing Time GMT+8**

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<td>Chairs: Chunsheng Cai, Peng Feng</td>
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8:30 Performance of simply-supported steel bridge in realistic fires
Zhi Liu

8:42 Flutter Behavior and Stability Evaluation of Suspended Footbridge through Wind Tunnel Experiments and Aeroelastic Flutter Analysis
Song Hyeon Lee

8:54 Effect of Firewall on a Suspension Bridge under Vehicle Fire
Keunki Choi

9:06 Risk Management Methodology GRDR. Application on Chilean Tunnels and Bridges
Hernán Pinto, Lorena Jorquera, Matias Valenzuela

9:18 Comparative Analysis of Carbon Emission of Special-Shaped Concrete Pier Constructed by 3D Printing and Traditional Construction
Chengxiu Jia

9:30 Discussion

**A5: High and ultra-high performance materials - III**

**Beijing Time GMT+8**

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<td>Chairs: Zhao Liu, Qian Wang</td>
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8:30 Numerical Simulation of the Connection Structure Between the Pier and Pile Cap of Precast Concrete Bridge Piers
Wenjun Li

8:42 Analytical Study on Slip Strength of Long Bolted Joint Combining with Bearing Type Bolts
Yu Chen

8:54 Fatigue Performance of Cracked Bridge Diaphragm Repaired by SMA/CFRP Composite Patch
Yaping Wu

9:06 Lifting and Rehabilitation of 5 Highway Overpasses in Brazil
Cao Nogueiri Boecker

9:18 Failure Mechanism Analysis of Circular CFRP Components Under Unequal Impact Load
Khalil AL-Buhathi

9:30 Discussion
### A2: Long span and high-rise structures - VI

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<tr>
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<th>Speaker</th>
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<tr>
<td>10:30</td>
<td>Behavior of Long-span Suspended Footbridge Under Wind Loads</td>
<td>Soomin Kim</td>
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<tr>
<td>10:42</td>
<td>Design and Construction of Chongqing Lijia Jialing River Bridge</td>
<td>Ya-ping Lai</td>
</tr>
<tr>
<td>10:54</td>
<td>Challenges in Design and Construction of WONJU 404 SKYBRIDGE in Korea</td>
<td>Sang-Hun Shin</td>
</tr>
<tr>
<td>11:06</td>
<td>Conceptual Design of 5km-Class Super Long Span Bridge</td>
<td>Chang-Su Kim</td>
</tr>
<tr>
<td>11:18</td>
<td>Prediction of Aerodynamic Coefficients using Artificial Neural Network in Shape Optimization of Centrally-Slotted Box Deck Bridge</td>
<td>Mohammed Elhassan</td>
</tr>
<tr>
<td>11:30</td>
<td>Study on measures to Improve Natural Vibration Characteristics of three-Towers and four-Span suspension bridge during Construction</td>
<td>Ming Gong</td>
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### C7: Fatigue and fracture

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<tbody>
<tr>
<td>10:30</td>
<td>A Bayesian Regularization Neural Network Model for Fatigue Life Prediction of Concrete</td>
<td>Huating Chen, Huaiguang Li</td>
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<tr>
<td>10:42</td>
<td>Mixed Mode Fatigue Crack Propagation Mechanism of the Diaphragm Cutout Detail</td>
<td>Chunsheng Wang</td>
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<tr>
<td>10:54</td>
<td>Fatigue Crack Propagation Characteristics of The Rib to Deck in Steel Bridge Deck</td>
<td>Chunsheng Wang</td>
</tr>
<tr>
<td>11:06</td>
<td>Fatigue Resilient Design of Bridge Orthotropic Steel Deck</td>
<td>Wenli Fan, Huaiguang Li</td>
</tr>
<tr>
<td>11:18</td>
<td>Parameter Analysis on Double-side Welded Connection of Orthotropic Steel Decks Based on Structural Stress</td>
<td>Kai Sun</td>
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<td>Discussion</td>
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SUPPORTING ORGANISATIONS

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Tongji University
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College of Civil Engineering, Tongji University
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Tongji University Bridge Engineering Discipline Development Fund
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OVM 欧维姆
CCC Second Harbour Engineering Company Ltd (short for SHEC), founded in 1950, was one of the four first-grade construction enterprises directly under the Ministry of Communications. It is now a wholly-owned subsidiary of CCC, a world's top 500 enterprises. After 70 years' development, SHEC has evolved into a large enterprise group with a diverse portfolio integrating planning and consulting, survey and design, investment and financing, engineering construction and asset capital operation, and provides customers with integrated services in the whole construction industry chain.

SHEC has always endured great hardships to move ahead while adhering to the corporate mission of making the world better connected, making urban and rural areas more livable, and making life better. While consolidating its three main businesses of port and waterway engineering, road and bridge engineering, and municipal engineering, SHEC actively expands new businesses such as housing construction, irrigation and hydropower engineering, water treatment and environmental protection engineering, building assembly manufacturing, and engineering maintenance services. Our engineering projects cover 33 provinces, municipalities, autonomous regions in China, and 30 countries and regions overseas.

Moreover, SHEC is a national high-tech enterprise and has built a state-class enterprise technology center, a national engineering research center, a post-doctoral scientific research workstation, four key laboratories, three collaborative innovation platforms, and five engineering and technological research centers, which is a think tank in accelerating the innovation development and high-quality development.

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As a wholly-owned subsidiary of China Railway Group Limited (CREC), China Railway Major Bridge Engineering Group Co., Ltd (hereinafter referred to as MBEC), is the only engineering contractor and investor in China with integrated capabilities of bridge scientific research, engineering design and civil construction, equipment research and development, mainly specialized in construction of various bridges over rivers, lakes and seas under complex or severe geological and environmental conditions.

MBEC has designed and built the most bridges in the world. After 70 years since founding, the number of bridges built by MBEC has reached over 3,000 with total length of more than 3,600km. In particular, MBEC has a strong hold of unique technical superiority in construction of large-span road bridge, railway bridge, multi-purpose bridge, super-long sea crossing and large-span bridge over deep canyon and achieves leading authorities in the world.

MBEC's gaining huge reputation in the international construction market, since 1950s after the aid project of railway bridge in Vietnam. MBEC has successfully completed projects in more than 20 countries and regions including Myanmar, Bangladesh, Indonesia, South Africa Tanzania, Angola and Morocco, etc. MBEC was listed on 225 Top International Contractors and the Top Ten International Bridge Contractors by Engineering New Record (ENR) in SIT America.
Introduction

Founded in 2003, as a wholly-owned subsidiary company of the Cross Bridge Construction Co., Ltd, the Cross Bridge Huadong Engineering Company is registered in Shanghai Pudong New area, with registered capital of 301M RMB. The Cross Bridge Construction Co., Ltd is the first listed company, under China Communications Construction Co., Ltd, in domestic highway construction industry and received special grade qualifications as general contractor of highway construction.

The firm has been awarded the following certificates, including A Level qualification as General Contractor of Highway Construction approved by Ministry of Housing and Rural-urban Development of PR China, A Level Qualification as General Contractor of Municipal Utilities Construction, C Level Qualification as General Contractor of Port and Waterway project, A Level Qualification as Specialized Contractor of Bridge Project, A Level Qualification as Specialized Contractor of Highway Pavement Project, A Level Qualification as Specialized Contractor of Bridge Project, A Level Qualification as Specialized Contractor of Tunnel Project and C Level Qualification as Specialized Contractor of Steel Structure project.

The company received "the Luban prize for Construction Project ", "the Tien-yew Jeme Civil Engineering Prize", "National Quality Project Gold Award", "First Class Prizes of The State Scientific and Technological Progress Award", "Shanghai Magnolia Award for Construction Project", "Shanghai municipal engineering gold medal". The management level and projects quality was appreciated by Party and state leaders during their site visit.

As an integrated multi business structure, primarily targeting the construction of cross-sea bridge and grand bridge, our business spans highway, railway, tunnel, municipal projects and mechanism renting and we strive to be involved in subway, underground tunnel and urban complex project. We operate in Shanghai, Zhejiang, Jiangsu, Hunan, Hubei, Chongqing, Guizhou, Guangxi and Southeast and Africa overseas market.

To be recognized as one of the core company of Cross Bridge Construction Co., Ltd, with distinct main business, good business performance, efficient management system and competitive, we are commitment to our core value "Fair, Inclusive, Practical, Innovative ". We respect that "A man who wants to go far he should build a solid foundation first". We strive to be a first-class integrated infrastructure construction value chain supplier and we endeavor to make a "better world, better city and better life".

Business distribution

East China: Jiangsu, Zhejiang, Shanghai, Fujian

Southeast Asia: Indonesia

Central China: Hunan, Hubei

South China: Guangxi, Guangdong

Southwest China: Yunnan, Guizhou, Sichuan, Chongqing

Africa: Mozambique

Qualifications & Honors

- National Occupation Safety
- Occupational Health and Safety
- Environmental Management System certificate
- Quality Management System certificate
- National Occupation Safety
- Occupational Health and Safety
- Environmental Management System certificate
- Quality Management System certificate

Sichuan RoadBridge (Group) Co.Ltd. (SRBG) with registered capital of RMB 6 billion is a state-owned key enterprise of Sichuan province and one of the core subsidiaries of Sudao Investment Group Co.Ltd.It owns qualifications of top grade for national highway engineering, general contracting and grade A for highway industry design, mainly engaged in investment, construction and operation of infrastructures including highway, railway, municipal engineering etc. SRBG has built series of world-class transportation infrastructures including the 1915 Canakkale bridge (steel box-girder installation) in Turkey, the Xihoumen bridge in Zhoushan, Zhejiang province of China, the Hiloangel bridge in Norway and the Luding Dadu river bridge in Sichuan province of China.

SRBG adheres to the development philosophy “serving the country, developing transportation, benefiting the people” and carry forward the spirit of new era-“overcoming difficulties, making contributions and striving for breakthrough”. SRBG is committed to developing itself into a first-class enterprise with social responsibility, sustainability and innovation-driven development. It is also making positive contributions to the development of Sudea group in establishing a domestic-leading, world-class transportation infrastructure enterprise.
Established as a core subsidiary of China Communications Construction Company Limited (CCCC) ranked among the Fortune Global 500, China First Highway Engineering Company Limited is an industry-leading large-scale infrastructure service provider which integrates business of consulting and planning, investment and financing, design and construction, and management and operation.

With a profound history, China First Highway Engineering Company Limited was subordinated under the Ministry of Transport of P.R.C (MOT) in 1963, then the company incorporated into China Road and Bridge Corporation (CRBC) in 1999. It was then transferred to China Communications Construction Company Limited (CCCC) in 2005, and incorporated by strategic restructuring of CCCC First Highway Engineering Co., Ltd. and CCCC Tunnel Engineering Company Limited in 2018. At present, the Company has over 24,000 employees working for more than 90 subsidiaries and branches with distinctive professional characteristics. Owning more than 260 qualifications including a Special Class Qualification for Highway Construction General Contracting, Housing Construction General Contracting Qualification, and a Class-A Qualification for Engineering Investigation; Playing the advantages of integrated services of investment, construction and operation in the entire industry chain, the Company has been awarded "National Civilized Unit", "National Excellent Constructor" and other honors, and has become the first subsidiary of CCCC to have total assets, annual newly signed contract amount and operating revenue all exceeding CNV 100bn. Moreover, it has also been listed as a contact point for Party building of state-owned enterprises and a participant in the "double-hundred action" reform of state-owned enterprises.

In its great efforts to build "specialized, sophisticated, distinctive and innovative" projects, the Company has made outstanding achievements in the fields of extra large bridges, long tunnels, super-large shield tunnelling machines, super high-rise buildings, comprehensive development of large cities, etc., breaking through and achieving excellent reputation in a number of "bottle-neck" technologies. Meanwhile, as one of the first large state-owned corporations in China to enter the international construction market and a pioneer in China-Africa cooperation, it has participated in the construction of several "Belt and Road initiative" (BRI) benchmark projects. Through years of hardwork, the Company has built the brands of Chinese highways, Chinese bridges, Chinese tunnels, CCCC tracks and CCCC cities, with these first-class brand of multiple business areas, complete value chains and systems, perfected sisterns with advanced concept and leading technology.

We, who used to be the railway engineering corps, were endowed with "red genes" and invincible spirits.

We, who were born to be the bridge-builder, were getting stronger with more bridges built by us.

For more than 70 years, we have been building roads in mountains, stepping on every inch of this land and growing up with our country.

We, among the Fortune Global 500, boast five special qualifications and Five Grade-A qualifications.

We have set over 20 records of top bridges in the world and over 30 records in China. We have built 10 bridges across the Yellow River, 14 bridges across the Yangtze River, 15 across the ocean bay, 5 across the Wujiang River, 4 across the Songhua River, to name but a few.

We have built more than 80 express rail lines, 30 high-speed rail lines and nearly 200 highways, built over 200 urban rail transit projects in 45 cities of China, undertaken more than 80 water conservancy and hydropower projects, and had infrastructure projects in more than 20 countries.

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Make the world more unimpeded
Make the city more livable
Make life better
China Railway Jiujiang Bridge Engineering Co., LTD (hereinafter referred to as “CRBE”) was established in 1971. It is affiliated to China Railway Group Limited, a Fortune 500 company, and is a core member of China Railway High-tech Industry Co., Ltd. CRBE is a national high-tech enterprise integrating steel girder manufacturing and installation, bridge construction, bridge machine development, technology testing, and bridge deck paving, providing comprehensive services for steel bridge manufacturing and erection.

Location: CRBE is located in Jiujiang City, Jiangxi Province, central China, with a 1.5-kilometer golden shoreline of the Yangtze River, with very convenient water and land transportation.

Qualification Certificate: CRBE has obtained a number of general contracting and professional contracting qualifications in the bridge industry chain of municipal, highway, railway, steel structure, bridge, bridge deck paving, lifting equipment installation, etc, and has a full set of related professional products manufacturing license and installation qualifications.

Achievements: Over the past 50 years, CRBE has participated in the construction of more than 1000 bridges, including famous domestic Yangtze River-crossing bridges such as Shanghai – Nanjing Bridge, Nanjing Dashengguan Bridge, Wuqiang Mountain Bridge, Anhui Tongling Bridge, Jiangxi Jiujiang Bridge, Wuhan Xianxingzhou Bridge, Anqing–Jiujiang Railway Blanyuzhou Bridge, Yichang Wujiang Bridge, and world-famous bridges such as Hong Kong – Shenzhen Western Corridor, Padma Bridge in Bangladesh, Da Nang Shun Phu Bridge, etc.

R&D capability: CRBE is the national enterprise technology center. Jiangxi provincial enterprise technology center. The bridge technology research institute of CRBE is the Jiangxi Steel Bridge and Special Equipment Engineering research center, and the only steel structure bridge engineering research center in the province; the Engineering technology research center of Jiujiang, Wuhan University of Technology steel bridge technology research center, undergraduate education practice base.

Production capacity: The company’s Jiujiang base covers a total area of 400,000 m² and a plant area of 350,000 m². There are several assembly sites for large-scale steel beam and bridge construction equipment, and all kinds of equipment for steel beam manufacturing and bridge construction, totaling 960 sets. The annual design and manufacturing capacity of steel beams is more than 200,000 tons, and the manufacturing capacity of large-scale bridge construction equipment is more than 50 sets. At the same time, the company has established a number of steel beam processing bases in Hubei Wuhan, Guangzhou Huizhou, Anhui Chuzhou, Henan Yuyang, Jiangnan Nanxiang, Yunnan Chuxiong, Lao and other countries, with an annual design and manufacturing capacity of more than 400,000 tons of steel beams.

Honors and Awards: CRBE has won 19 times China Construction Engineering Luban Prize, 18 times the National Excellent Welding Award, 10 times the National Scientific and Technical Progress Prize, 10 National Quality Projects Award, 5 times Chinese Steel Structure Award, 4 times International "George Richardson" Award, 3 times Outstanding Bridge Structural Engineering Award of International Bridge Association, 2 times international bridge conference "Theodore Cooper railway bridge" Award, 1-time FIDIC Project Award, 1-time "Li Chun" Award for Highway Traffic Quality Engineering.

Started in 1966, OVM made first prestressing jack in 1968, eventually expanding to 30+ different product series today. Learning on the way that every challenge no matter how small, no matter how difficult, is a chance for OVM to grow and improve. With more than 50 years of experience, 1000+ bridges, OVM is a leading product supplier and specialist contractor in China in the field of prestressing and other special construction techniques.

Quality Derives from Profession, Lead Attributes to Innovation.

With 5 manufacturing bases, 3 academician workstations, 4 National Technical Center, 1 fully equipped in-house testing lab, over 2000 employees as well as 20+ agents marketing network in over 50 countries. OVM supply life-cycle service on bridges, buildings, geological engineering, nuclear industry, water conservancy & hydropower and renewable energy field. As the professional prestressing service supplier in China, OVM provides Post-tensioning Systems, Cable Systems, Construction Solutions, Bearings & Expansion Joints, Monitoring Systems, over 30 series and more than 420 types of products.

We are confident that whatever obstacle you face, wherever you face them, we can solve it together.

Realize Your Ideas, Support Your Solutions.

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**Modern Expansion Joints for Bridges**

**Mageba** is a Swiss company with its head office in Bulach. It is a globally present specialist and manufacturer of high-end structural bearings, expansion joints as well as seismic protection and structural health monitoring systems. Well over 20,000 structures, including many landmark bridges, have been equipped with Mageba products.

**TENSA® MODULAR expansion joint**
Modern modular expansion joint for bridges – “smart”, easily maintenance and replaceable in order to minimise life-cycle costs.

**TENSA® POLYFLEX® Advanced PU**
Modern PU-based flexible plug expansion joint for bridges – the ideal solution for city expressways.

**FUSTEEL ETERNALS**

- Stainless Steel Anchor Bolt
- Stainless Steel Rebar
- Bent Stainless Steel Rebar
- Stainless Steel Mesh
ABOUT IABSE

The International Association for Bridge and Structural Engineering was founded in 1929. The mission of IABSE is to promote the exchange of knowledge and to advance the practice of structural engineering worldwide in the service of the profession and society. To accomplish the mission, IABSE organizes conferences and symposia, publishes journals and reports, and also presents awards to recognize outstanding achievements in research and practice that advance the profession of structural engineering.

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ABOUT NANJING

Nanjing, the ancient city situated in the heartland of lower region of Yangtze River, has long been a major center of culture, education, research, politics, economy, transport networks and tourism in China. It is the capital city of Jiangsu province and the second largest city in the East China region, with a population of 8.5 million.

Nanjing is also known as the cradle of Chinese civilization. Built in memory of Confucius, the Confucius Temple was the first national level highest academic institution of ancient China. It is a must-visit place now for the shopping and pedestrian street not far from it, offering all kind of authentic Nanjing snacks and featured souvenirs, such as stationery treasures for calligraphy and painting, teapot and tea, Suzhou embroidery, cheongsam. Dined and wined to satiety, we can choose to boat on the Qinhuai River with old buildings up to 600 years standing on both banks, enjoying the beautiful night scenery along, or walk along the Ming Dynasty City Wall to see the vicissitude of history.

In addition, Nanjing has a wide variety of delicious cuisine. The dishes made of duck have a long history and are quite popular among local people. Other Nanjing specialties also show the perfect combination of color, aroma and taste.

Here in Nanjing, beside scenic spots, historical sites and excellent cuisine, you can appreciate the elegant Kunqu Opera and melodious Pingtan in theater and Chinese tea house.

Looking forward to meeting you in Nanjing!

Confucius Temple Shopping and Pedestrian Street  Scenery along Qinhuai River

Ming Dynasty City Wall  Qixia Temple (Buddhism)  Jiming Temple (Buddhism)
Jiangsu Provincial Transportation Engineering Construction Bureau

Jiangsu Provincial Transportation Engineering Construction Bureau (Construction Headquarters of The Yangtze River Crossings in Jiangsu Province) is founded with the authorization of Jiangsu Provincial Government. It takes responsibilities of construction management for national and provincial transportation projects, and has constructed a large number of brand transportation projects which are renowned nationwide even worldwide.

As the main force in the provincial transportation construction, it focuses on the requirements of national strategy implementing and provincial high-quality development, and fully expedites the key projects’ construction of super highways and Yangtze River Crossings. It is providing solid supports and assurances for the integrative transportation system by implementing the construction of 8 world-class Yangtze River Crossings i.e. Chang-Tai Yangtze River Bridge, Longtan Yangtze River Bridge, Jiangyin-Jingjiang Yangtze River Tunnel, Zhang-Jing-Gao Yangtze River Bridge, Hai-Tai Yangtze River Tunnel and Su-Tong Second Yangtze River Crossing, and the new-building or expansion of super highways such as Su-Xi-Chang South, Li-Ning, Jian-Xing, Lian-Su, Ning-Yan, Yi-Huai Section of Jing-Hu, Ping-Guang Section of Hu-Shan and Lian-Huai Section of Chang-Shen.

Remaining the original mind, taking a leading position in the industry and going forward in great strides, it upholds the spiritual pursuits of “to construct attentively and to build the dream with full strength”. It takes up the mission of “to strive to be an example and to advance in the frontline”. For the target of expediting to build a demonstration plot of modernized communication and transportation, it propels the constructions of transportation projects with high-quality. It strives to deliver industry samples for transportation power which can represent Chinese construction level. It has been delivering quality constructions with hundred-year safety.