



2024 Annual Report of ILEE

Dear ILEE Community,

We are pleased to present the latest edition of the *ILEE Annual Report*, showcasing the significant research advancements and international collaborations that have driven our lab's progress. This report offers a comprehensive overview of key updates, insights, and achievements from our global research team.

We deeply value your contributions and dedication to our mission. As we look to the future, we remain excited about continued discoveries and impactful research.

Lab Director(s)

Prof. Ying Zhou

Prof. Billie F. Spencer Jr.

Chair of Scientific Committee

Prof. Xilin LU

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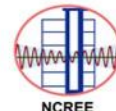
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1) ILEE Summer program

The 2024 ILEE Summer Program, themed "Seismic Resilience for Cities and Structures," concluded successfully at Tongji University. Held from July 15 to 27, the program focused on enhancing seismic resilience and brought together 55 participants from 14 countries. It provided a platform for advanced learning and international exchange in earthquake engineering. The program featured graduate-level courses delivered by six distinguished experts in the field.



Prof. Lou Yongqi delivered a speech emphasizing the importance of interdisciplinary collaboration and innovation in advancing seismic resilience.



Prof. Liu Fang delivered a speech highlighting the importance of integrating cutting-edge research into practical engineering solutions.



Academician Lu Xilin attended the closing ceremony and presented certificates to the outstanding students



The Deputy Director of ILEE, Prof. Yu Jiangtao awarded certificates to the outstanding volunteers

Opening and Closing Ceremonies highlighted collaboration and program achievements in seismic resilience.



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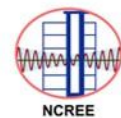
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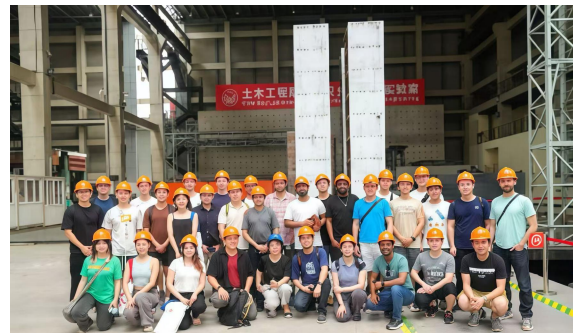
Lecture by Prof. J.N. Reddy, Texas A&M, on advanced structural mechanics and engineering innovations



Promoting global collaboration and knowledge sharing through an international exchange platform



Exploring cultural landmarks and cityscapes through urban sightseeing tours.



Interactive learning and research experiences through laboratory visits.

Engaging Activities and Highlights from the 2024 ILEE Summer Program.

The ILEE Summer Program was honored to host lectures from distinguished academics, including Professors Richard Henry, Ian Buckle, Gian Paolo Cimellaro, Antonio Bobet, Qunfang Hu, Associate Professors Dimitrios Konstantinidis, and Wei Liu, showcasing a strong international presence in earthquake engineering education.



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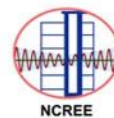
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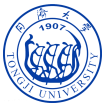
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Muneo Hori
Director General
Research Institute for Value-Added Information Generation
Japan Agency for Marine-Earth Science and Technology
Kanagawa, Japan



Tony T. Y. Yang
Professor, Department of Civil Engineering
Director, Smart Structures Laboratory
The University of British Columbia
Vancouver, Canada



Ying Zhou
Professor
Dean, College of Civil Engineering, Tongji University
Director, International Joint Research Laboratory of Earthquake Engineering
Shanghai, China



Ioannis Anastasopoulos
Head, Dept. of Civil, Environmental and Geomatic Engineering
Chair of Geotechnical Engineering
ETH Zürich, Switzerland



Gian Paolo Cimellaro
Professor
Department of Structural, Geotechnical & Building Engineering (DISEG)
Polytechnic of Turin
Torino, Italy



J. N. Reddy
Regents' Professor
The holder of the O'Donnell Foundation Chair IV in Mechanical Engineering
Texas A&M University
College Station, Texas, USA.

Distinguished lectures delivered during the ILEE Summer Program, showcasing expertise and innovation in earthquake engineering

2) Journal Center

In 2024, the Resilient Cities and Structures journal reached significant milestones.

In January, it was indexed by the Ei-Compendex database, enhancing its global academic recognition. In November, the journal was selected for the "High-level New Journal" project under the CAST Excellence Action Plan, further affirming its reputation in China.

These achievements reflect the journal's growing influence in resilient infrastructure and urban systems research.

● Editor-in-Chief



Prof. Ying Zhou
Tongji University



Prof. Michel Bruneau
University at Buffalo



Prof. Gian Paolo Cimellaro
Polytechnic of Turin

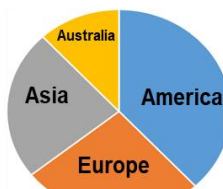
● Honorary Editor



Academician Xilin Lu
Tongji University



● Editorial board (28/10)



Editorial Board on Resilient Cities and Structures



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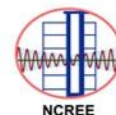


University at Buffalo

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3) ILEE Projects

The International Joint Research Laboratory of Earthquake Engineering (ILEE) at Tongji University, established in 2015, aims to cultivate international collaboration and academic exchange in earthquake engineering research. Emphasizing seismic resilience, ILEE supports collaborative projects to address fundamental and innovative research challenges in this field.

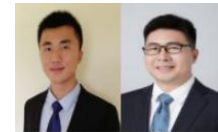
In 2024, three international research projects in earthquake engineering have been awarded funding to advance seismic performance and structural resilience. The projects are led by principal investigators from institutions in the United States, New Zealand, and Greece, in collaboration with Tongji University and the International Laboratory for Earthquake Engineering (ILEE). Each project has been granted 400,000 RMB to support their research efforts.

These projects highlight ILEE’s dedication to global collaboration and advancing earthquake engineering. They aim to improve seismic design, retrofitting, and structural resilience, strengthening ILEE’s role as a key center for international research and innovation. The partnerships are expected to drive significant progress in seismic risk reduction and the development of safer, more resilient infrastructure worldwide.

The funded projects include:

1. Seismic Analysis of Shallow Tunnels in Liquefiable Soils During Strong Earthquakes

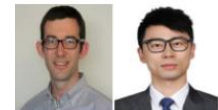
- a. PI: Dr. Qiushi Chen, Clemson University, USA
- b. Co-PI: Dr. Haitao Yu, Tongji University / ILEE



Dr. Qiushi Chen (left)
Dr. Haitao Yu (right)

2. Large-Scale Testing of Flanged Post-Tensioned Concrete Walls

- a. PI: Dr. Richard Henry, University of Auckland / QuakeCoRE, New Zealand
- b. Co-PI: Dr. Yiqiu Lu, Tongji University / ILEE



Dr. Richard Henry (left)
Dr. Yiqiu Lu (right)

3. Resilience and Sustainability-Informed Steel Structure Design Assessment and Optimization

- a. PI: Dr. Theodoros L. Karavasilis, University of Patras, Greece
- b. Co-PI: Dr. Wei Wang, Tongji University / ILEE



Dr. Theodoros L. Karavasilis (left)
Dr. Wei Wang (right)



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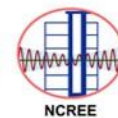
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4) Events and updates



From March 18th to 23rd, 2024, Professor Zhou Ying, Dean of civil engineering college of Tongji University, and the ILEE Director, led a delegation to Germany and Austria, visiting key partner universities. They signed several cooperation agreements, consolidating existing partnerships and exploring new areas of collaboration.



Name	Selected Subject
Lu Xilin	Civil Engineering
Zhou Ying	Civil Engineering
Yu Haitao	Civil Engineering
Wang Wei	Civil Engineering

On March 27th, 2024, ILEE Chair of Scientific Committee, academician Lu Xilin, Dean of the College of Civil Engineering and ILEE Director, Prof. Zhou Ying, along with ILEE Vice Directors Prof. Yu Haitao, and Prof. Wang Wei, were named to the 2023 list of 'Highly Cited Chinese Researchers' released by Elsevier. They were also selected as Top 1% Highly Cited Scholars in Civil Engineering for the 2024 CNKI Discipline List, along with ILEE Vice Director Prof. Xu Yan.



The 2024 ILEE Summer Program, themed "Seismic Resilience for Cities and Structures," successfully concluded at Tongji University, Shanghai, China. On July 19th, 2024, Prof. Zhou Ying, Dean of the College of Civil Engineering and ILEE Director, delivered a lecture on advancing seismic resilience and structural innovation.



On July 17th, 2024, as part of the Summer Program, students from around the world visited the Main Campus Laboratory and the Earthquake Engineering Laboratory at Jiading Campus, Tongji University.



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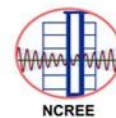


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On September 19th, 2024, the National Key Laboratory of Civil Engineering Disaster Prevention and Mitigation successfully hosted the 2024 Academic Exchange Meeting for Direction IV (Urban Resilience Enhancement) at Tongji University. The event was chaired by Academician Lu Xilin, Chief Scientist of the laboratory and member of the Chinese Academy of Engineering.

Six experts delivered insightful academic presentations at the 2024 Academic Exchange Meeting for Direction IV at Tongji University on September 19th, 2024. Prof. Zhou Ying, Dean of the College of Civil Engineering and ILEE Director, presented advancements from the Phy-SeisFormer Model to SeisGPT, highlighting earthquake response prediction and resilience evaluation for building clusters.



Building on a century of civil engineering excellence, we honor our legacy and drive innovation toward the future. The Civil Engineering Department Development Forum and the 110th Anniversary Celebration of the department were held on November 9th, 2024, at the Siping Road Campus of Tongji University, Shanghai, China.

The Tongji University Civil Engineering Development Forum launched the "Artificial Intelligence Enabled Civil Engineering Discipline Innovation and Development Action Plan (2024-2027)" on November 11th, 2024. Prof. Zhou Ying, Dean of the School of Civil Engineering and ILEE Director, formally announced the initiative.



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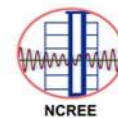


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5) International Academic Exchange



Dr. Shane Johnson, from the Joint Institute of University of Michigan, was invited by Dr. Zeeshan Qaiser of ILEE on December 29th, 2023, to deliver a talk on smart construction technologies titled "Surface Molds Actuated with Reconfigurable Tooling (SMART) and Coreless Fiber Winding for Smart Construction." This event aligns with ILEE's vision of advancing innovation in smart construction.



Dr. Kevin Dukemele, from the University of Ghent, Belgium, was invited by Dr. Zeeshan Qaiser of ILEE, on March 7th, 2024, and was very excited to come to the Civil Engineering College of Tongji university, to deliver a talk titled "Exploiting Nonlinearity in Mechanical and Piezoelectric Vibration Absorbers."



Prof. Yu Haitao, the Deputy Director of ILEE, was invited to participate in the International Symposium on Computational Geomechanics, Hong Kong, China, on March 3rd to 6th, 2024. He delivered a keynote presentation titled 'A unified nonlocal theory for discontinuous, multiphysical and multiscale behaviors of geomaterials', receiving widespread recognition.



World Tunnel Congress 2024, organized by the International Tunnelling Association in Shenzhen from April 19–25, featured Prof. Yu Haitao, ILEE Deputy Director, as Vice Chairman of the WG9 Earthquake Working Group. Prof. Yu organized a WG9 meeting, served on the Academic Committee, and chaired a concurrent session.



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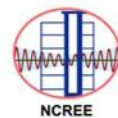


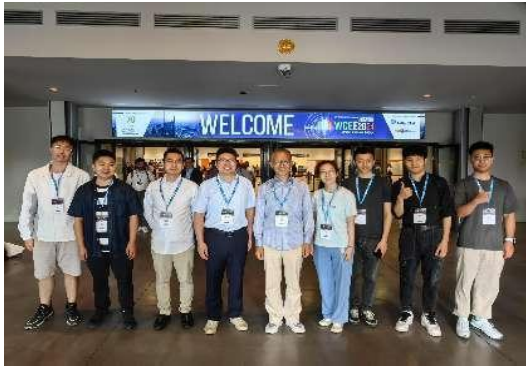
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The 18th World Conference on Earthquake Engineering took place in Milan, Italy, from June 29 to July 7, 2024. Prof. Yu Haitao, ILEE Deputy Director, served as convener and organizer for GEO-1, focusing on recent advances in seismic design, risk assessment, and management of tunnels and underground infrastructure. He co-chaired four symposia with Prof. Pitalakis, President of the European Association for Earthquake Engineering, providing a comprehensive overview of recent achievements and key challenges in the seismic resilience of underground structures.

Prof. Xu Yan, Deputy Director of ILEE, served as Secretary-General of the 4th IABEE International Bridge Seismic Forum, held at the University of Ottawa, Canada, in August 2024. The event attracted over 300 participants from domestic and international backgrounds and received positive feedback. Prof. Xu Yan also delivered an invited presentation titled "Application of Substructure using Socket Connections in China," showcasing advancements in experimental research and seismic design methods for prefabricated bridge substructures with socket connections.



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