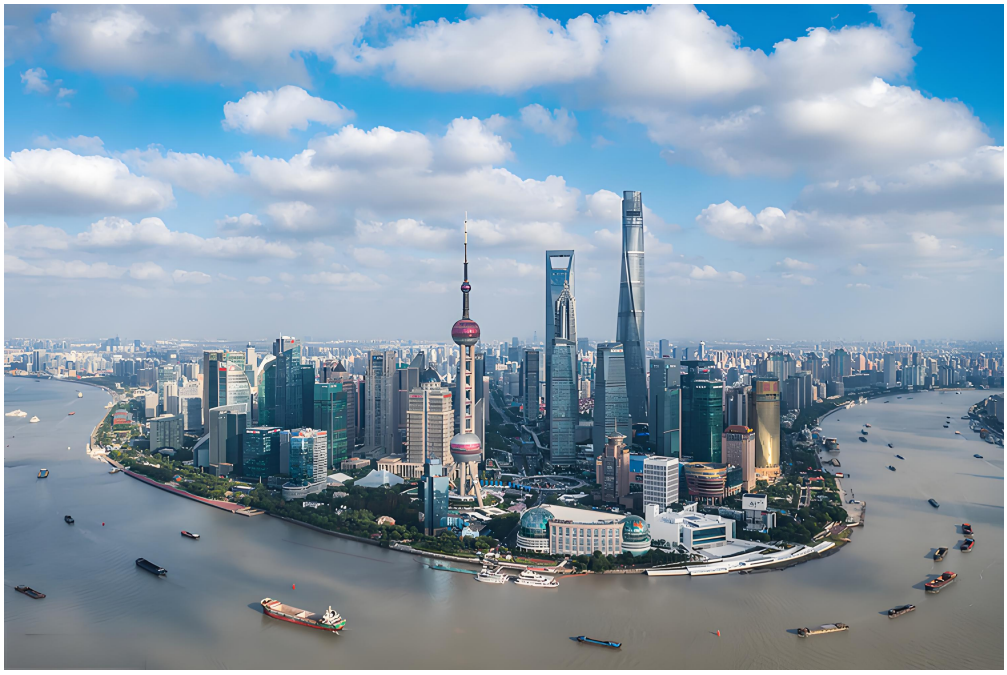
JCSS

Joint Committee
on Structural Safety

Global Reliability of Structures
&
Code Calibration

Workshop of the JCSS
Hosted by:
Tongji University

25-26 October 2025, at Tongji University, China



Scope of the Workshop

Introduction

This workshop will consist of two complementary parts: (1) **Reliability- and Risk-Based Calibration of Structural Design Standards**, and (2) **Global Reliability of Structures**. While the calibration of design standards is a necessary development towards sustainable and resilient evolution of the built environment, studies on global reliability are essential to assess the vulnerability of single structures to exceptional loads and to deliver important insights for developing general rules for structural robustness. Currently, standards development is taking place in different parts of the world, and the workshop is seen as an occasion for the exchange of ideas and experiences.

Global reliability of buildings, bridges, wind turbines, wave(-energy) converter structures, and other civil and transportation engineering structures has attracted increasing attention, in particular under disasters such as strong wind, huge waves, earthquakes, impacts, and explosions. Generally, live loads and other environmental loads may cause deterioration with accumulated damage before structures are attacked by extreme loads.

Workshop Details

The workshop, organized by the **JCSS** and hosted by **Tongji University** and the **Technical University of Munich**, aims to bring together practical experience and scientific insights so that both quantitative and qualitative approaches to *global reliability* and *risk-based calibration of design provisions* can be discussed for overall improvement.

Goal: The workshop will provide a forum for an overview of the state of the art and the state of the practice of *global reliability of structures* and of *reliability- and risk-based calibration of structural design standards*, as well as current practice and trends in design codes of different international societies/organizations and countries.

Topics of the Workshop

Experts will present **invited contributions** focused on the following topics.

Part A: Global Reliability and Robustness of Structures

- Hazard and uncertainty quantification of loads and disaster actions
- Structural analysis from constitutive law to global structural system
- Failure criteria from material to component and structure levels
- Methods for global (system-level) reliability evaluation
- Design optimization based on global reliability
- Global reliability and robustness provisions in design codes

Part B: Reliability- and Risk-Based Calibration of Structural Design Standards

- Target reliability levels, consequence classes, and risk acceptance criteria
- Characteristic values and reference periods for actions; climate trends and combinations
- Model uncertainties for actions and resistance; bias/COV estimation and updating
- Calibration of partial factors and model factors (ULS/SLS; time-variant effects)
- Links to sustainability, resilience and resource efficiency

Format

The workshop will consist exclusively of invited contributions from experts in structural safety, stochastic mechanics, and uncertainty quantification and propagation. Both **in-person and online** participation will be supported. The number of in-person participants is limited to **50**.

Registration

We kindly request all participants to register. Please indicate your participation preferences (in person, online, or unable to attend) **here**.

Registration Deadline: 15.10.2025

Preliminary Time Schedule

Saturday, 25.10.2025

14.00	**Introduction and Welcome**
14.30	**Part A**: Global Reliability and Robustness of Structures
16.00	Refreshments
16.30	**Part A, cont.**: Global Reliability and Robustness of Structures
18.00	End of Day 1
18.30	Dinner at Kingswell Hotel

Sunday, 26.10.2025

08.30	**Part A, cont.**: Global Reliability and Robustness of Structures
10:00	Refreshments
10.30	**Part B**: Reliability- and Risk-Based Calibration of Structural Design Standards
12.00	Closure
12.20	End of the Workshop

Honorary Chair

- **Jie Li**, Tongji University, China

Technical and Organization Committee

- **Jochen Köhler**, Norwegian University of Science and Technology, Trondheim, Norway
- **Daniel Straub**, Technical University of Munich, Germany
- **Iason Papaioannou**, Technical University of Munich, Germany
- **Jianbing Chen**, Tongji University, China
- **Yongbo Peng**, Tongji University, China
- **Jun Xu**, Hunan University, China
- **Maria Giuseppina Limongelli**, Politecnico Milano, Italy
- **Michael H. Faber**, Aalborg University, Denmark

Note that the workshop will precede a regular JCSS meeting to be held on 26 October (afternoon) and 27 October (all day).

Venue

Tongji University
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Shanghai 200092, China
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Web: www.tongji.edu.cn

How to get to Tongji University

The organizer in Tongji University will arrange to pick up you in the airport or railway station. Please contact the organizer in Tongji University by writing to Prof. Jianbing Chen (chenjb@tongji.edu.cn) to let them know your detailed itinerary.
For your convenience, here is also some information as follows.

Train

Shanghai is easily accessible from the other cities by a pleasant high-speed train journey. Most high-speed trains will arrive in the Shanghai Railway Station or Shanghai Hongqiao Railway Station. From here to Tongji University:

- **Taxi**: 35 mins about CNY100 from Shanghai Hongqiao Railway Station, 25 mins about CNY50 from Shanghai Railway Station;
- **Underground**: Line 10 from Shanghai Hongqiao Railway Station around 60 min; walk about 5 mins.

Air

Shanghai has two main airports that are internationally connected:

- **Shanghai Pudong Airport**:
  - Taxi: About 50 mins and 180 CNY.
  - Underground: About 8 mins MagLev, then take a taxi for around 30 min or take underground Line 2 to Line 10 to Tongji University Station.
- **Hongqiao International Airport**:
  - Underground: Line 10 rbout 10 mins to Tongji University Station;
  - Taxi: about 35 mins and 110 CNY;

Hotels

The organizer in Tongji University will provide accommodation for you, and will make reservation of rooms in Tongji Kingswell Hotel. Tongji Kingswell Hotel is located outside the main gate of the main campus of Tongji University, only 50 m from Tongji University. It is also very convenient, not far away from the downtown of Shanghai.

If you prefer to booking other hotels by yourself, there are a wide choice of hotels with convenient metro connection to Tongji University with Metro Line 10.