CCEE / PCEE Topics in Performance-Based Seismic Design of Bridges CCEE / PCEE Topics in Performance-Based Seismic Design of Bridges

This half-day workshop will introduce the latest issues and approaches to the seismic design of bridges in Canada and New Zealand. Several topics common to, or contrasting between, the two countries will be covered. Current and evolving approaches and issues in seismic design will be discussed. Topics will include:

- The benefits, application and challenges of performance-based seismic design of bridges, including design approaches targeting return to service, low damage or rapid repairability.
- The evolution in seismic hazard in Canada and New Zealand. Hazard in both countries has increased significantly with new data from the Christchurch and Kaikoura earthquakes in New Zealand and from national data in Canada. The current challenges in applying probabilistically developed hazard for both geotechnical and structural design will be discussed, as well as emerging considerations for future code editions in Canada and New Zealand.
- The proposed changes to the structural and geotechnical design of bridges to the upcoming CSA S6:25 Canadian Highway Bridge Design Code, including the 6th generation hazard. The rationale, philosophies and work flows underpinning the draft 2025 bridge code (being published for public review in summer 2023) will be covered.
- Geotechnical topics in seismic design, including Canadian code changes proposed in soil classifications, liquefaction assessment and soil-structural interaction. Topics in geotechnical performance and design in New Zealand will be discussed as well.
- Current and emerging topics in structural topics in seismic design in Canada and New Zealand.

The workshop will focus on the overall approach and technical strategies to support the seismic design process, rather than an emphasis on calculation methods.

The workshop will be of interest to geotechnical and structural engineers, seismologists who wish to understand how hazard estimates impact bridge design and relative costs, and owners and planners who would like to better understand current performance-based seismic design and how engineering methods and decisions impact bridge planning, concepts, risks, damage and recovery.