**Mini-Symposium Title**

Computational Methods for Evaluating and Enhancing Infrastructure Resilience under Natural Hazards.

**Description**

This mini symposium aims to gather researchers and practitioners employing a wide range of computational approaches to assess and enhance the resilience of infrastructure systems under natural hazards such as earthquakes, landslides, floods, and extreme weather events. We welcome contributions that utilize both traditional and emerging methods, including but not limited to finite element and finite difference methods, mesh-free techniques, multiscale or multi-physics simulations, and data-driven approaches such as machine learning, deep learning, and surrogate modeling. Topics of interest include, but are not limited to:

* Large-scale seismic or multi-hazard risk assessment using high-performance computing (HPC)
* Computational modeling of geohazards (e.g., slope failure, liquefaction)
* Fluid-structure interaction and erosion simulation
* AI-augmented damage detection and resilience evaluation
* Hybrid physics-informed and data-driven frameworks for infrastructure analysis

By encouraging the integration of various computational paradigms, this session seeks to promote cross-disciplinary collaboration and highlight the evolving role of simulation and data science in hazard mitigation, infrastructure planning, and resilience enhancement.

**Lead Organizer:**

Assoc. Prof. Peng-Yu Chen, Department of Civil Engineering, National Central University, TAIWAN. Email: sam75782008@g.ncu.edu.tw

**Co-organizers:**

Asst. Prof. Yu-Chen Su, Department of Civil Engineering, National Central University, TAIWAN. Email: ycsu@ncu.edu.tw