

## Risk, resilience and sustainability informed integrity management of infrastructure systems

### Frameworks for risk intelligence and disaster resilience of infrastructure systems

**Speaker: Prof. Junho Song, Seoul National University, South Korea**

**Host: Prof. Da-Gang Lu, Harbin Institute of Technology, China**

**Time: 28th November 2022, 15:00 – 16:00 Korea Standard Time**

#### Lecture outline:

This lecture discusses two frameworks recently proposed to promote the risk intelligence and disaster resilience of infrastructure systems. First, the system-reliability-based disaster resilience framework provides a holistic perspective based on three criteria: reliability ( $\beta$ ), redundancy ( $\pi$ ), and recoverability. The framework supports resilience-informed decision-making processes through a  $\beta$ - $\pi$  diagram obtained by reliability analyses. Second, the lecture describes the concept of risk intelligence in terms of four elements: risk identification, integration, inference and implementation. Recent research activities to promote risk intelligence are presented along with opportunities and challenges.

#### About the speaker:

Junho Song is Professor at the Department of Civil and Environmental Engineering, Seoul National University, S. Korea. He has research interests in structural & system reliability analysis, reliability-based optimization & decision making, risk-reliability-resilience analysis of urban communities and networks, and statistical/machine learning for civil infrastructure systems. Junho obtained his Ph.D. degree in Civil and Environmental Engineering from UC Berkeley (2004) and worked at UC Berkeley (Postdoc.; 2004-2005), Risk Management Solutions, Inc. (Senior Engineer; 2005), and the University of Illinois at Urbana-Champaign (Assistant/Associate Professor, 2005-2013). In 2009, he was awarded an IASSAR Early Achievement Research Award. He has been serving as the Chairman of the IFIP WG7.5 (2016-present), the Chairman of CERRA (2015-2019), and the President of CERRA (2019-present).



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