Exponent®
Engineering & Scientific Consulting

Yingjie Wu, Ph.D., P.E.

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Professional Profile

Dr. Wu specializes in earthquake engineering, structural dynamics, finite element methods, and nonlinear structural analysis, and application of that knowledge to the design and analysis of steel and concrete structures. He has experience in a variety of structural laboratory testing methods, including quasi-static cyclic testing, shake table testing and hybrid simulation testing that combines advantages of experimental testing and analytical simulations.

Prior to joining Exponent, Dr. Wu was a graduate student researcher at the Pacific Earthquake Engineering Research (PEER) Center at University of California, Berkeley, where he earned a Ph.D. in structural engineering. His research primarily focused on innovative bridge subsystems to reduce earthquake-induced damage (seismic resiliency) and to facilitate accelerated bridge construction. He developed a new hybrid simulation system, created nonlinear finite element models and conducted extensive system level experimental, analytical and hybrid simulation to prove the effectiveness of the proposed bridge subsystems. His research also demonstrated that hybrid simulation is a good alternative to costly shake table testing in investigating new and innovative structural/geotechnical systems.

Dr. Wu has rich experience in teaching graduate level structural engineering courses during his graduate studies at UC Berkeley, including dynamics of structures, finite element methods, prestressed concrete structures and experimental methods in structural engineering.

Academic Credentials & Professional Honors

Ph.D., Civil and Environmental Engineering, University of California, Berkeley, 2020

M.S., Civil and Environmental Engineering, University of California, Berkeley, 2015

B.S., Civil Engineering, Tongji University, 2014

Penzien Fellowship, University of California, Berkeley, 2017

Academic Excellence Scholarship of Tongji University, 2011-2013

Shanghai Volkswagen Scholarship, Tongji University, 2012

Licenses and Certifications

Professional Engineer Civil, California, #94311

Academic Appointments

University of California - Berkeley, Department of Civil and Environmental Engineering, Lecturer

Professional Affiliations

Earthquake Engineering Research Institute (EERI)

American Society of Civil Engineers (ASCE)

Publications

Wu, Y., Mosalam, K.M., Gunay, S., Nema, A., Restrepo, J.I. “Hybrid Simulation of a Self-centering Bridge-bent and Comparison with Shaking Table Tests.” Proceedings, 17th World Conference on Earthquake Engineering, Sendai, Japan, 2020

Mosalam, K.M., Hao, S., Wu, Y., Gunay, S., Takhirov, S., Wong, P. “System-level Hybrid Simulation and Design of Highway Bridges with Innovative Connecting Device.” Proceedings, 17th World Conference on Earthquake Engineering, Sendai, Japan, 2020

Wu, Y., Gunay, S., Mosalam, K.M. “Hybrid Simulation for the Seismic Evaluation of Resilient Highway Bridge Systems.” PEER Report No. 2020/11, Pacific Earthquake Engineering Research Center, University of California, Berkeley, CA, 2021

Presentations

Wu, Y., Mosalam, K.M., Günay, S., Nema, A., Restrepo, J.I. “Hybrid Simulation of a Self-centering Bridge-bent and Comparison with Shaking Table Tests.” Oral presentation, 17th World Conference on Earthquake Engineering, Sendai, Japan, 2020.

Mosalam, K.M., Hao, S., Wu, Y., Günay, S., Takhirov, S., Wong, P. “System-level Hybrid Simulation and Design of Highway Bridges with Innovative Connecting Device.” Oral presentation, 17th World Conference on Earthquake Engineering, Sendai, Japan, 2020.

Wu, Y., Günay, S., Mosalam, K.M. “System Level Performance Evaluation of an Innovative Bridge Bent Design using Hybrid Simulation.” Oral & Poster presentation, 2020 PEER Annual Meeting, Pacific Earthquake Engineering Research Center, University of California, Berkeley, CA, 2020.