

A School of Engineering Seminar San Francisco State University

Probabilistic Seismic Hazard Analysis, Earthquake Ground Motion Time Histories and Site Response



SF STATE

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Synopsis:

Probabilistic seismic hazard analysis (PSHA), earthquake ground motion time histories and site response are several key elements of the entire earthquake engineering. For the purpose of safety in the event of a natural disaster such as earthquakes, comprehensive analyses and the most updated seismic hazard information are of critical importance. Therefore, I will first introduce PSHA and AMEC experts' involvement in the development of a new seismic source model - the Central and Eastern United States Seismic Source Characterization for Nuclear Facilities (CEUS-SSC) for use in conducting probabilistic seismic hazard analyses for nuclear facilities east of the Rocky Mountains. Then I will cover the topic of earthquake ground motion time histories which are developed after the hazard analyses are completed and the target design spectra are generated. The ground motion time histories are to be used as inputs for further analyses. Finally I will focus on the topic of earthquake ground-motion site response analyses and the impact of uncertainties of soil properties in the site response analyses.

Speaker Bio:

Zhihua Li received her Ph.D. in Geotechnical Engineering from Department of Civil and Environmental Engineering at University of California, Davis (UC Davis) in 2006. She also received a Master's degree in Electrical and Computer Engineering from UC Davis at the same time. After graduation, she joined URS Corporation in Oakland, CA as a geotechnical engineer. In 2007, she moved to Schlumberger in Houston Texas as a research scientist in geophysics. In 2008, she returned back in California to work with Geomatrix Consultants Inc. (now acquired by AMEC). Dr. Li's PhD research was focused on developing innovative geophysical techniques based on electromagnetic theories to be applied in geotechnical engineering for imaging and monitoring object displacements, porosity and pore pressure evolution for the George E. Brown Jr. Network for Earthquake Engineering Simulation (NEES) program sponsored by National Science Foundation (NSF). After joining industry, Dr. Li expanded her interest in earthquake engineering, earthquake ground motions, soil response and probabilistic seismic hazard analyses. Dr. Li has over ten referred journal and conference proceeding publications. She is a member of ASCE, EERI, SEG, EAGE and Sigma Xi.

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