CalGeo
The California Geotechnical Engineering Association

Non-Ergodic (Site-Specific) Site Response and Its Utilization in Recent Non-Nuclear Engineering Projects

Wednesday, March 8 | Noon - 1:30 pm | Zoom

Registration: $100 Members | $150 Non-Members

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Background

Site-specific (partially non-ergodic) seismic hazard analysis is increasingly employed as part of ground motion hazard characterization for critical projects. Site-specific site response can be evaluated from the interpretation of ground motions recorded at (or near) the site or from simulations. The simulation method that is most frequently employed is ground response analysis, which can capture impedance, resonance, and nonlinear effects for vertically propagating shear waves. Such effects are often large contributors to site response, but are not sole contributors, as other effects related to basin geometry can also be influential, particularly at long oscillator periods.

Your Takeaways

- We will describe procedures for conducting ground motion hazard analysis incorporating site-specific site response, including estimation of the mean site response, aleatory variability and epistemic uncertainty.
- We will describe open-source software tools that can be used to apply these methods.
- The challenges and benefits of applying these procedures will be illustrated through discussion of several case histories for California sites.