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May 15th | 11:30 AM

EB 510



CYCLIC RESISTANCE OF PACIFIC NORTHWEST SILTS

Abstract

The liquefaction and cyclic softening susceptibility of nonplastic to medium-plasticity silty soils, with behavior that can span from sand-like to clay-like, is not well understood. Silt deposits are common in the Pacific Northwest of the United States and are potentially liquefiable or susceptible to cyclic softening, and present a particular hazard in response to a Cascadia Subduction Zone earthquake. This presentation aims to answer pertinent and outstanding questions concerning the cyclic response of silty soils through a systematic and coordinated laboratory testing program, with the end goal of bridging element scale and in-situ responses to address the existing knowledge gaps and finally development of physics-informed regression models for the prediction of cyclic resistance of silty soils.

Biography

Ali Dadashi, PhD, joined Jacobs as a geotechnical engineer in 2022 after completing PhD in Geotechnical earthquake engineering at Oregon State University. His primary research interests center on the seismic performance of soils including earthquake-induced liquefaction/cyclic softening at in-situ and in the laboratory. His approach bridges the in-situ response of instrumented soil with lab testing and uses statistical models to better understand and predict the performance of the soils.