



Murat Monkul

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EB 310



OBSERVATIONS DURING THE RECONNAISSANCE OF FEBRUARY 6, 2023 TURKIYE EARTHQUAKE SEQUENCE AND REVISITING THE INFLUENCE OF D_R ON LIQUEFACTION IN THE LABORATORY.

Abstract

On February 6, 2023, two devastating earthquakes occurred on the East Anatolian Fault, Türkiye, which affected had severe impacts on civil engineering structures in in the region involving 11 cities. In the first part of the presentation some geotechnical observations in Hatay, an important Turkish border city will be discussed. Several soil liquefaction cases, including a boulevard, a mosque complex, fishing shelter, and military quarters will be presented. In the second part of the presentation, relative density, probably the most commonly used density index parameter in geotechnical earthquake engineering research and practice will be re-visited. Its effect on cyclic liquefaction of clean and silty sands will be discussed and a new concept named as “the crossing effect” will be explained based on a recent laboratory based study, which reveals that liquefaction resistance-fines content-relative density relationship is more complex than previously thought.

Biography

Dr. Monkul conducts active research for more than twenty years. He worked on various research projects funded by FHWA, ODOT, TUBITAK, Fulbright Commission, EU either as a researcher or PI. His research areas involve contents on different aspects of soil mechanics, geoenvironmental and geotechnical earthquake engineering. His international publications involve various topics such as engineering behavior of transitional soils, liquefaction of clean and silty/clayey sands, different aspects of experimental soil mechanics, lunar soil simulants and their stress-strain behavior, sustainable usage of dredged soils, alternative ways in CPT based liquefaction assessment, microplastic contamination in soils, fall cone behavior and undrained shear strength of silts etc. He had a US Patent on soil reconstitution device titled “Automatic Funnel Control Device”. He is currently doing his sabbatical at Oregon State University, as a senior Fulbright Scholar working on liquefaction behavior of silts.