Session ID: GEO-9

Title
STRUCTURES AGAINST LIQUEFACTION

Convenors
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Description
Liquefaction is one of the major causes of damage to buildings and infrastructure systems during an earthquake. Liquefaction occurs when soils lose strength and stiffness, and display fluid-like characteristics, causing significant damage to retaining walls, foundations, their supported surface structures (e.g., buildings, bridges, wind turbines), and underground constructed facilities (e.g., tunnels, pipelines). As a complex phenomenon with varying geometry, type, dimension, and affected by multiple factors (e.g., propagation of seismic waves; local geological conditions), liquefaction problems have been reported frequently after catastrophic earthquakes, such as those occurred in 1964 Niigata, Japan, 1999 Kocaeli, Turkey, 2008 Wenchuan, China, and 2011 the Tohoku Region, Japan. This has motivated increasing research and practices that position soil liquefaction an important earthquake engineering topic where ongoing efforts are needed to assess, quantify, design, and mitigate its consequences on civil engineering structures. This technical session aims to bring together researchers, practitioners, decision-makers, and stakeholders to share their knowledge and experience in soil liquefaction engineering. Specific topics are as follows, but not limited to:

1. Liquefaction during previous earthquakes
2. Assessment of liquefaction potential
3. Modeling and testing of liquefaction effects
4. Soil behavior after liquefaction
5. Liquefaction mitigation methods
6. Structural response analysis and design against liquefaction
7. Structural retrofit against liquefaction
8. Liquefaction risk and resilience assessment
9. Data-driven liquefaction assessment and design

Invited Speakers
S. Dashti [4], A. Ye [5], P. Zimmaro [6]

Affiliations
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