

**Session ID: GEO-2**

**Title**

UNDERGROUND STRUCTURES IN LIQUEFIABLE GROUND

**Convenors**

Y. Yuan <sup>1</sup>, R. Cudmani <sup>2</sup>, A. Flora <sup>3</sup>

**Description**

Liquefaction of soil would result catastrophic collapse of buildings due to lack of bearing capacity or ground flow. The trigger of soil liquefaction was studied for decays, but mostly focused on surface buildings or foundation. Underground structures such as tunnels or metro stations, as key infrastructures, would cross liquefiable ground inevitably. Many efforts have been put on experiments not only element tests of the dynamic performance of sand, but centrifuge tests with typical underground structures. However, the critical interpretation of the testing results requires the theory of computational soil dynamics, structural mechanics, and the mechanics of soil-structure interaction.

This technical session aims to discuss every aspect on computational approaches to study the mechanism of underground structures in liquefiable ground. Experts and researchers worldwide are expected to present their pioneer exploration. Experiments carried out in element tests, centrifuge tests, and 1-g shaking-table tests are interests of fundamental aspects with varies densities, loading paths, and saturated conditions. Simulation of these laboratory tests, or even field tests are also encouraged to submit contributions, especially with different types of underground structures.

**Invited Speakers**

Y. Chen <sup>4</sup>, I. Anastasopoulos <sup>5</sup>, A. Bobet <sup>6</sup>, F. Liu <sup>1</sup>, E. Billotta <sup>3</sup>, S. Chrisopoulos <sup>2</sup>, J. Zhang <sup>7</sup>

**Affiliations**

<sup>1</sup> Tongji University, Shanghai, China, <sup>2</sup> TU Munich, Munich, Germany, <sup>3</sup> University of Naples Federico II, Naples, Italy, <sup>4</sup> Zhejiang University, Hangzhou, China, <sup>5</sup> ETH Zurich, Zurich, Switzerland, <sup>6</sup> Purdue University, West Lafayette, USA, <sup>7</sup> Xi'an Jiaotong University, Xi'an, China