

T41A-0607: Ground Characterization Studies in Canakkale Pilot Site of LIQUEFACT Project

Thursday, 14 December 2017

08:00 - 12:20

📍 New Orleans Ernest N. Morial Convention Center - Poster Hall D-F

The our aim is to outline the ground characterisation studies in Canakkale test site. Study is based on the EU H2020 LIQUEFACT project entitled "Liquefact: Assessment and mitigation of liquefaction potential across Europe: a holistic approach to protect structures / infrastructures for improved resilience to earthquake-induced liquefaction disasters". Objectives and extent of ground characterization for Canakkale test site includes pre-existing soil investigation studies and complementary field studies. There were several SPT and geophysical tests carried out in the study area. Within the context of the complementary tests, six (6) study areas in the test site were chosen and complementary tests were carried out in these areas. In these areas, additional boreholes were opened and SPT tests were performed. It was decided that additional CPT (CPTU and SCPT) and Marchetti Dilatometer (DMT) tests should be carried out within the scope of the complementary testing. Seismic refraction, MASW and micro tremor measurements had been carried out in pre-existing studies. Shear wave velocities obtained from MASW measurements were evaluated to the most rigorous level. These tests were downhole seismic, PS-logging, seismic refraction, 2D-ReMi, MASW, micro tremor (H/V Nakamura method), 2D resistivity and resonance acoustic profiling (RAP). RAP is a new technique which will be explained briefly in the relevant section. Dynamic soil properties had not been measured in pre-existing studies, therefore these properties were investigated within the scope of the complementary tests. Selection of specific experimental tests of the complementary campaign was based on cost-benefit considerations Within the context of complementary field studies, dynamic soil properties were measured using resonant column and cyclic direct shear tests. Several sieve analyses and Atterberg Limits tests which were documented in the pre-existing studies were evaluated. In the complementary study carried out, additional sieve analyses and Atterberg Limit tests were carried out. It was aimed to make some correlations between geophysical measurements and other field measurements; such as SPT, blow count values.

Plain Language Summary

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Authors

Ferhat Ozcep *

Istanbul University

Cihan Ozer

Istanbul University

Sadik Oztoprak

Istanbul University

Sinan Sargin

Istanbul University

Namik Aysal

Istanbul University

Ekrem Bekin

Istanbul University

Ilknur Bozbey

Istanbul University

Mostafa Almasraf

Istanbul University

Okan Tezel

Istanbul University

Mualla Cengiz Cinku

Istanbul University

Kagan Ozdemir
Istanbul University

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