UNIVERSITY OF CAMBRIDGE
Department of Engineering

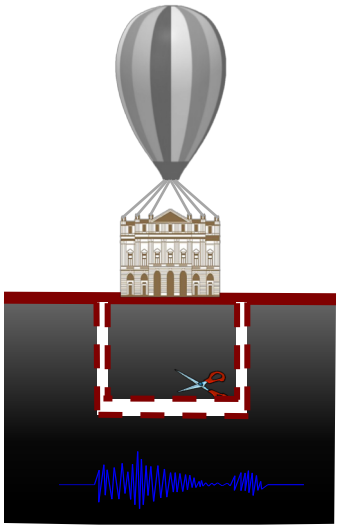
SOFT GROUTING FOR SEISMIC ISOLATION: Numerical and Physical modelling

Dr. Valeria Nappa

Post-Doc, University of Naples Federico II

Seminar overview:

In recent years, a number of techniques has been developed to deal with seismic risk with reference to existing or new buildings. As far as the latter are concerned, structural engineers have nowadays developed refined technical elements able to cut most of the seismic energy (for example seismic isolators and dampers). The seismic protection of existing buildings is still a matter of great concern. In countries like Italy, with a high seismic hazard and old or very old towns, where many buildings are hundreds of years old, this is one of the most relevant problems for the protection of both population and cultural heritage. In some and rare cases, existing structures have been seismically isolated with passive structural systems installed underneath the buildings with a complex procedure of partial uplifts and setting of isolators and dampers. These procedures are expensive and not always feasible, and depend on the structural behaviour of the building. The idea of using ground improvement techniques to modify subsoil properties far from the building in order to mitigate seismic shaking is therefore appealing. Such an idea relies on the fact that, by introducing a layer of artificially modified material the propagation of vibration energy can be modified. In the seminar, the applicability of this new technique will be discussed.



Biography:

Dr. Valeria Nappa received her PhD in ‘Structural, Geotechnical Engineering and Seismic Risk’ in 2018 from University of Napoli Federico II. At present, she is a Post-Doctoral researcher for the LIQUEFACT project, funded by the EU within the H2020, which addresses the mitigation of risks to Earthquake Induced Liquefaction Disasters events in European communities with a holistic approach, in the Department of Civil, Architectural and Environmental Engineering at University of Napoli Federico II. She is member of Italian Geotechnical Association (AGI), International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) and geotechnical committee of Association of Engineers in Napoli. In January 2016, she was selected from Italian Geotechnical Association (AGI) to present her research at “XXVI European Young Geotechnical Engineers’ Conference” in Sibiu, Romania. From May 2018, she cooperates with FED (Future Environmental Design) spinoff from the University of Naples Federico II, as a Geotechnical BIM specialist.

When and where:

Wednesday, 21 Nov, 19:00

Harley Mason room, Corpus Christi College

Queries:

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