

# Capacity design of geotechnical structures: recent advances and future perspectives

## Dr. Domenico Gaudio

Research Associate

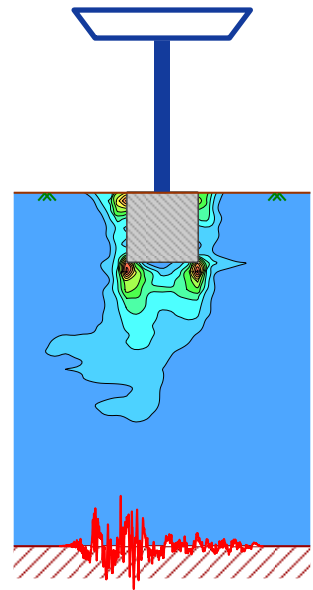
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### Synopsis:

In the case of strong earthquakes, it may be unfeasible to design structures while keeping foundation soils in the elastic regime. For this reason, plastic mechanisms occurring in the foundation soils may need to be considered at the design stage. In some circumstances, it may even be preferable to promote plastic mechanisms to improve the seismic performance of the overall system, provided that resulting permanent displacements are controlled and compared with threshold values. Some consequences of this new approach are shown in this presentation, focusing on caisson foundations supporting bridge piers and reinforced-earth retaining walls.

### Bio:

Prior to joining the Geotechnical and Environmental Research Group as a Research Associate at University of Cambridge, Dr. Domenico Gaudio took both his Master and PhD degree at Sapienza University of Rome and then continued his research activities at Polytechnic University of Milan. His primary research interest concerns non-linear dynamic soil-structure interaction, specifically focused on the performance-based design of caisson foundations supporting bridge piers and geosynthetic-reinforced earth retaining walls subjected to strong earthquakes. He also dealt with modelling the propagation and runout of debris flows through the Smoothed Particle Hydrodynamics (SPH) method. His research is currently focused on the behaviour of bridge foundations under severe seismic actions through both numerical modelling and dynamic centrifuge testing, and specifically to the possibility of taking advantage of the dissipation mechanisms connected to the attainment of the shear strength in the foundation soils. He was recently awarded the “AGI-IGS Award 2020” by the Italian Chapter of the International Geosynthetics Society (IGS).



### When and where:

**Wednesday, 14 Oct, 19:00**

**Online**

### Queries:

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