The Institute of Geotechnical Engineering (IGS) is offering a thesis with the topic:

Finite element modeling of liquefaction effects in soils and its effects on structures

Liquefaction of soil has been observed during major seismic events. Much of the damage that has been caused as a resulting of earthquake induced liquefaction is due to settlement or tilting due to liquefaction of saturated sandy subsoil. Although many numerical tools have been developed to predict and reproduce liquefaction, none have been more widespread other than the ubiquitous finite element method.

This Thesis topic concerns itself with the prediction of behaviour of coastal structures like dykes, retaining walls, and critical structures like dams, and high rise building. The project aims to predict/reproduce behaviour of said structures under a seismic load. The works is expected to be carried out in Plaxis 2D / Plaxis 3D, using the constitutive model UBC3D-PLM. The Thesis may also be carried out as part of a student assistant work.

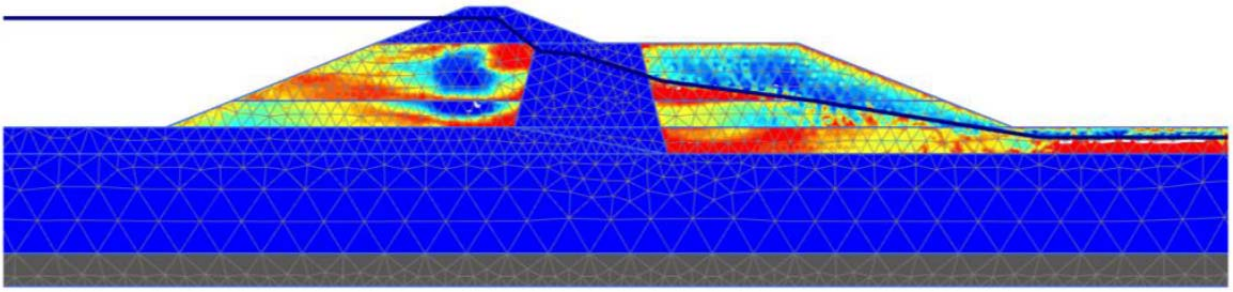

Figure 1: pore pressure of dam under seismic load

Targets:

- Literature survey of major seismic events
- 2D/3D modeling of structures, dynamic analysis
- Comparison with observed field data

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