



## INVITED SESSION

### MPM Modelling of Soil-Water Structure Interaction Problems in Geomechanics

#### ORGANIZERS

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**Key words:** MPM, soil–water–structure interaction, erosion, sedimentation, multiphase dynamic and quasi-static problems, land- and submarine slides

#### ABSTRACT

The material point method (MPM) is largely applied in geotechnics because it demonstrated to be well suited to study complex large displacement problems that include multiphase interactions, soil-structure interactions, and non-linear material behaviour [1]. The developments and applications in this field are growing very fast.

The purpose of this Invited Session is to show the advances achieved by the international MPM community in the modelling of soil-water-structure interaction problems using MPM. Topics within the scope of interest include but are not limited to, multiphase formulations, soil-structure and soil-fluid interactions applied to the simulation of geomechanical problems such as slope instabilities, erosion problems, installation problems, tunneling, underground explosions, and soil liquefaction problems. Theoretical contributions investigating the performance and accuracy of coupled formulations are welcome. We particularly welcome papers showing the applicability of MPM to experimental tests or real case events

#### REFERENCES

[1] **Fern E, Rohe A, Soga K, Alonso E** (2019) The Material Point Method for Geotechnical Engineering: A Practical Guide. *10.1201/9780429028090*.