2[d] Yet Another Discrete Element Workshop

Discrete-based hydro-mechanical modelling of geo-structures

This workshop will discuss the latest advances towards the numerical modelling of hydraulic geo-structures, such as earth dams and levees, using Discrete Element Methods (DEM) that are the most appropriate to account for the discrete nature of the building material of such structures.

In order to address the inherent scientific complexity of this large-scale hydro-mechanical problem, contributions are welcome accross the scales.

On one hand, and in order to adress relevant complex phenomena such as internal erosion or the hydro-mechanical behaviour of partially saturated or saturated geomaterials, developments regarding the hydro-mechanical coupling at the material scale are expected. Coupled approaches bridging the DEM with the Lattice Boltzmann Method (LBM), Pore Fluid Volume (PFV) or other Computational Fluid Dynamics (CFD) models are typical examples.

On the other hand, numerical techniques that enable one to tackle the structure scale by either reducing, or accomodating, the required large number of Discrete Elements are also in complete adequation with the Workshop topic, whose ultimate goal is to include the former developments into the latter models.

Following a first edition in Grenoble University in 2014, users and developers of YADE (*https://www.yade-dem.org/*) or other DEM codes ones are all welcome, as well as technical discussions regarding code efficiency.

Topics:

- DEM or continuous numerical methods coupled with DEM
- CFD/DEM, DEM/LBM, DEM-PFV couplings in civil engineering
- Multiscale hydro-mechanical modelling in geomechanics
- Numerical approaches to internal erosion in geomaterials
- Technical aspects to code efficiency in general and parallelization in particular

Practical aspects:

Organised by RECOVER (Irstea), this 2 to 3 days Workshop will take place in Aix-en-Provence or Marseille (south of France) during the first half of June 2018.