

Session “Bridging the gap between experiments and modelling: from laboratory testing to material models prediction”

Coordinators:

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Outline:

At this point in time, when soil laboratory testing has advanced to the extent that we can determine the contact behaviour between two sand grains and coarse soils can be modelled at the microscale with realistic particle properties, it may be a good time to pause and ask: are we modelling real internal processes for either coarse or fine soils? This day session attempts to address this issue.

The sub-sessions will concern the laboratory testing providing evidence of a micro to macro behavioural framework. Both consolidated soils, either coarse or fine, whose structure developed through sedimentation and consolidation in saturated conditions and compacted soils, deposited and loaded in partially saturated conditions, are of interest. The afternoon sub-sessions will be focused on the modelling of micro- and macro-processes, including the differences between the micro-structure of consolidated and compacted soils, which will be emphasized with experimental data to serve as platform for the modelling. Examples of how some of that evidence is integrated in modelling should be provided. The morning and afternoon sessions will be centred around two invited lectures each, complemented by selected presentations. Extra discussion time will be scheduled.

Three sub-sessions are foreseen: 1. Experimental evidence of physical processes in soils and their experimental characterisation; 2. Modelling micromechanical properties and processes with discrete mechanics; 3. Continuum modelling of micromechanical processes with macromechanics. The modelling sessions should focus on models that actively account for experimental observations.

The organisers would like to invite you to participate in one of the sessions above in the form of a 20-minute presentation. Abstracts should be submitted through the ALERT website. We have extended the deadline for submission of abstracts to the 20th of June 2021.