11th International Conference on Physical Modelling in Geotechnics

8 – 12 June 2026, ETH Zurich, Switzerland

Call for Abstracts

Special Session on

Nature-based solution for sustainable geotechnical systems

Organisers

Andrea Galli - Politecnico di Milano

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Abstract submission on ISSMGE Conference Review Platform

(Deadline: 31-07-2025, 23:59:59 UTC)

Session Description

The interest in Nature-based solutions to Civil and Geotechnical engineering problems has rapidly increased in these last decades since they more and more appear as promising, feasible and efficient solutions for achieving durable and sustainable geotechnical systems. In this perspective, understanding the complex mechanical and hydro-mechanical processes governing the soil-root interactions has a pivotal role in several research areas, ranging from more traditional topics like slope stability analyses and landfill design, up to a relatively recent and emerging topic like the assessment of the uprooting resistance of trees to lateral loads. All these areas are also severely impacted by the ongoing climate changes, both in natural/forestry regions and in highly anthropized areas (urban forestry), so that innovative and reliable solutions are urgently needed to mitigate their potentially catastrophic effects. The session will gather results from experimental 1g and centrifuge modelling, as well as from real-scale testing/monitoring of such complex systems. Both the local scale of the single root traits and the global scale of entire root system architectures will be considered. Given the highly multidisciplinary nature of the proposed topic, co-authorship of experts coming from disciplines other than Soil Mechanics and Geotechnical engineering are also welcome. The session will be mainly focused on physical modelling topics (e.g. experimental procedures, measuring devices, modelling results, …), but some hints from theoretical or numerical modelling, when useful to better highlight complex interactions and coupling phenomena, are also accepted.