



EUNSAT2025 + BGE

5th European Conference on Unsaturated Soils
Biotechnology in Geotechnical Engineering
Lisbon, 1 to 3 September 2025

<https://eunsat2025.tecnico.ulisboa.pt>

ACÇÃO DE FORMAÇÃO FUNDEC

(Totalmente em inglês)

Unsaturated Soils and biotechnology in geotechnical applications

Tuesday - 2nd September

13:30 Reception at FUNDEC room (V1:01, 1st floor)

All courses will be in the Auditorium of the Congress Center of DECivil, floor 01.

14:00 to 16:00

Auditorium

Opening BGE

Keynote Lecture

Lyesse Laloui (Swiss Federal Institute of Technology, EPFL, Switzerland)

From Microbial Bonds to Macroscopic Strength: A Mechanical Perspective on Biocemented Soils

Keynote Lecture

Grainne El Mountassir (University of Strathclyde, UK)

Interplay between biological processes and unsaturated soil behaviour

Coffee Break

16:30 to 18:00

Auditorium

Selected lectures (FUNDEC course I)

27 Rafaela Cardoso, Ana Carolina Farinhas, Mário Oliveira, Miguel Q. Cruz, Isabel Gonzalez, Ana Teresa Rodrigues, Leslie Sapin and Annette Esnault-Filet

Study of the durability of biocementation treatment applied to a real slope in Portugal

76 Natascha Kallerhoff, Ricarda Sellinghoff, Wolfgang Lieske, Wiebke Baille and Torsten Wichtmann

Biopolymer-modified bentonite-silt composites to improve the hydro-mechanical properties of landfill mineral sealings

104 Giuseppe Pedone, Agostino Walter Bruno, Marianna Pirone, Talenta Pitso and Domenico Gallipoli

On the combined use of hydrated lime and guar gum for rainfall-induced shallow landslide risk mitigation

9 Jiale Zhu, Abbas El-Zein, Thomas Hubble and Guien Miao

Root Biomechanics Testing Challenges: Findings from Experiments on Native Australian Trees (RECORDED)

100 Lluís Monforte, Laurin Hauser, Josep Maria Carbonell and Marcos Arroyo

An exploratory model of tree root pull-out in partly saturated soils

162 Marius Milatz

Experimental investigation of the pull-out resistance of simplified root system architecture models in dry sand

Wednesday – 3rd September

9:00 to 10:30

Auditorium

Bright Spark lecture

To be announced

Bright Spark lecture

To be announced

Coffee Break

11:00 to 12:30

Auditorium

Keynote lecture

Alessio Ferrari (University of Palermo, Italy // EPFL, Switzerland)

Shales: an unsaturated Soil Mechanics perspective.

Keynote lecture

Claudia Vitone (Politecnico di Bari, Italy)

Bio-Materials and Nature-Based Solutions for Marine Waste Valorisation: Multiscale Investigations, Coupled Phenomena, and Engineering Applications

Visit to the laboratory of Geotechnics (it can be in Portuguese)

Lunch (Holiday Inn hotel)

14:00 to 16:00

Auditorium

Selected lectures (FUNDEC course I)

105 Marianna Pirone and Gianfranco Urciuoli

Multi-Factor Rainfall Thresholds (MF-RT) for shallow slip prediction based on field monitoring

91 Georgios Belokas, Dimitrios Kokoviadis and Michael Bardanis

A fully instrumented field station to monitor essential unsaturated soil variables: Records and lessons during the Medicane Daniel

116 Marianna Pirone, Giuseppe Vitiello, Giuseppe Pedone, Francesca Casini, Antonio Santo and Gianfranco Urciuoli

The PROMISE Project: An integrated approach for mitigation of flowslide risk – Preliminary results from the Salerno Test Site

159 Alessandro Fraccica, Matteo Maggi, Danilo D'Angiò, Mauro Bonasera, Gianluigi Di Paola, Vittorio Chiessi and Giovanni Bertolini

Hydro-mechanical characterisation and monitoring through conventional and satellite data: the Calita landslide case (Italy)

47 Amanda DiBiagio, Vittoria Capobianco, Amy Oen and Lena M. Tallaksen

Hydro-mechanical effects of deciduous forest on slope stability: first results from a case study in Western Norway

14 Ethelbert O. Mezie, Aikaterini Tsiampousi and Ken Vinck

Numerical simulation of pore water pressure effects on landslides - case study of Nanka in southeastern Nigeria

139 Shunsuke Fujino, Shin-Ichi Kanazawa, Satoe Suzuki and Satoru Ohtsuka

Study on rainfall infiltration behavior of soil structures considering vegetation's slope failure prevention function

31 Andrea Giusti, Rafaela Cardoso, João Nascimento and Teresa Melo
Impact of climate on groundwater levels at a case study in Alentejo, Portugal, considering
unsaturated infiltration

Coffee Break

16:30 to 18:00

Auditorium

Keynote Lecture

Annette Esnault Fillet (Soletanche-Bachy, France)

Industry perspective in soil improvement by biocementation.

Keynote Lecture

Leon Van Paassen (Boskalis, Netherlands/ Arizona State University, USA)

UNSAT meets BGE: How burping bacteria mitigate earthquake-induced liquefaction

Closure EUNSAT 2025 +BGE