

You are cordially invited to attend the **CUS Online Seminar: Mechanics of Rooted Soils: Recent Advances** on 23 September 2026 (Wednesday) via Microsoft Teams.

Please refer to the attached PDF for more details of the online seminar. Thank you.

CUS Online Seminar: Mechanics of Rooted Soils: Recent Advances

Speaker: Professor Anthony LEUNG, Hong Kong University of Science and Technology

Date: 23 Sep 2026 (Wednesday)

Time: 10:30 am to 12:00 pm (Singapore Time)

Platform: MS TEAMS (The meeting link will be sent to the registrants one day before the online seminar.)

Organised By: Centre for Urban Solutions (CUS), School of Civil and Environmental Engineering (CEE), Nanyang Technological University (NTU), Singapore

Supported By: [Biogeotechnics](#) (IF = 15.9)

Registration (Free): Please click the link below to register.

<https://events.teams.microsoft.com/event/b0794f83-b96e-4a4e-9da6-5a3e7ef56be2@15ce9348-be2a-462b-8fc0-e1765a9b204a>

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About the Seminar

Characterising the hydromechanical properties of unsaturated rooted soils is crucially important to correctly determine the vegetation effects on seepage and stability of bioengineered soil slopes. Understanding the engineering behaviour of rooted soils requires knowledge from pore-level physical soil-root mechanical interaction, which is however lacking in the current state-of-the-art. This presentation will report the latest scientific discoveries of the hydromechanical behaviour of unsaturated rooted soils and their implication to engineering design of bioengineered slopes. The first part of the presentation will focus on the mechanical anisotropy behaviour of rooted soils, in terms of both shear strength and shear modulus. New microstructure fabric anisotropic models will be introduced to explain several new experimental phenomena when subjected to different stress paths. The second part of the presentation will report the advanced use of artificial intelligence (AI) to aid the discovery of the pore-level soil-root-water interaction, in order to explain the underlying mechanisms of root exploration on the water retention behaviour.

About the Speaker



Professor Anthony LEUNG is a Full Professor in the Civil and Environmental Engineering and the Director of the Geotechnical Centrifuge Facility at the Hong Kong University of Science and Technology (HKUST). His research expertise is unsaturated soil-vegetation interaction with emphasis on geotechnical engineering applications such as slope stabilisation. Professor Leung has published more than 160 SCI journal articles in the subject of soil-vegetation interaction and co-authors a textbook 'Plant Soil Slope Interaction'

published by Taylor & Francis. He is the awardee of many major international awards, including the 2025 Scott Sloan Best Paper Award (best paper in Computers and Geotechnics), 2022 Geotechnical Research Medal (best paper in Geotechnique), 2022 Outstanding Young Geotechnical Engineer Award of the ISSMGE, 2021 R. M. Quigley Award (best paper in Canadian Geotechnical Journal), 2019 Excellent Youth Scholar of the NSFC and 2019 Bright Spark Lecture Award of the ISSMGE. He is currently the Founding Editor-in-Chief of the ISSMGE Journal of Geotechnical Research, the Immediate Past President of the Hong Kong Geotechnical Society (HKGES) and General Secretary of TC106 (Unsaturated Soils) and TC107 (Tropical & Residual Soils).

Regards

Professor CHU Jian

Director, Centre for Urban Solutions (CUS)

School of Civil and Environmental Engineering (CEE)

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