EWG-IE Erosion Down Under+ Workshop Program

Thursday 3 December, 4-7pm (AEST)

Zoom: https://uqz.zoom.us/j/87012291491

Welcome to this special online edition of European Working Group on Internal Erosion (EWG-IE). The Erosion Down Under+ workshop was collaboratively organised by researchers from universities in Australia and Asia to share recent outcomes and discuss future research endeavours related to internal erosion. This workshop will be hosted Prof Alexander Scheuermann and Dr Adnan Sufian at the University of Queensland.

The theme of this workshop is '**Physical Modelling, Observation Methods and Analysis Technique**'. Presentations will cover innovative physical modelling approaches and measurement methods used to observe erosion processes and understand the underlying mechanisms. Novel experimental techniques that explore erosion across the scales, capture the hydromechanical influences and conduct measurements internally within the soil are also presented. In addition, novel analysis techniques that explore how measurement and physical modelling data can inform our understanding of the erosion process will be explored. Computational research that seeks to complement physical modelling and measurement techniques will also be presented.

The schedule of presentations is listed below. The workshop comprises three sessions with four presentations in each session. Presentations will be 8 minutes in duration with 4 minutes of discussion. The workshop will be concluded with a general discussion.

Session 1: Physical Modelling and Observational Methods

Chair: Dr Adnan Sufian (University of Queensland)

4:00pm: Observational methods for internal erosion at UQ

Alexander Scheuermann, Yingyi Zhang, Venkata Annapareddy and Adnan Sufian (University of Queensland)

4:12pm: Use of depth camera to monitor surface settlement due to backward erosion piping in a centrifuge

Akihiro Takahashi and Kazuki Horikoshi (Tokyo Institute of Technology)

4:24pm: The New Zealand Dam Resilience Research Programme: optimising industry drivers in experimental academic research

Kaley Crawford-Flett and Katherine Yates (University of Canterbury)

4:36pm: Real time monitoring technology for controlling internal erosion

Aharon Ran (Sensoil)

Session 2: Modelling and Analysis of Internal Erosion

Chair: Professor Akihiro Takahashi (Tokyo Institute of Technology)

4:54pm: UNSW's research on internal soil erosion

Adrian Russell, Kurt Douglas, Shijin Li and Rebecca Allen (UNSW Sydney)

5:06pm: Preliminary development of an heterarchical model for internal erosion

Itai Einav, Benjy Marks and James Baker (University of Sydney)

5:18pm: Internal erosion: Interactions among numerical computation, constitutive theory and experiment across the scales

Ha Bui (Monash University) and Giang Nguyen (University of Adelaide)

5:30pm: Some preliminary ideas in modelling internal erosion and mud pumping

Daichao Sheng (University of Technology Sydney)

Session 3: Experimental Methods

Chair: Professor Adrian Russell (UNSW Sydney)

5:48pm: Internal erosion and its impact on soil fabric; a multi-scale insight

Mahdi Disfani and Amir Mehdizadeh (University of Melbourne)

6:00pm: Experiments on sand erodibility during backward erosion piping (BEP)

Lubomir Petrula and Jaromir Riha (Brno University of Technology)

6:12pm: Experimental estimation of the loose fraction in suffusive soils

Peter To, Lewis Batic and Lalik Cheouk (James Cook University)

6:24pm: Laboratory modelling of internal instability in granular soils under static and cyclic loading

Jahanzaib Israr (University of Engineering & Technology Lahore)

Discussion Forum

6:40pm

Chair: Professor Alexander Scheuermann (University of Queensland)