

# IRNGeoMech Workshop 2023

(International Research Network Geomech)

## Internal Soil Erosions – Theory, experiment and computation: Can we connect them across the scales?

Organizers: *Ha H. Bui, Giang D. Nguyen, Francois Nicot, Oliver Millet*

**When:** 23 – 24 February 2023, 5:00 – 8:00 pm (AEDT)

**Where:** Online – Free register in advance for this meeting:

<https://monash.zoom.us/meeting/register/tZMtc-yhqj8sGNDdmGFNrYMTThVqvZUzFhB89>

After registration, you will receive a confirmation email containing information about the meeting

### PROGRAM: 23<sup>rd</sup> February – What mechanisms are needed?

Time	Duration	Topic	Speaker
<b>WELCOME AND INTRODUCTION</b>			
5:00pm	5 min	Welcome Remarks	
<b>KEYNOTE LECTURE</b>			
5:05pm	45 min	<b>Observation and identification of important transport mechanisms of erosion within granular material</b>	<b>Alexander Scheuermann</b> (University of Queensland, Australia)
<b>FEATURED LECTURE</b>			
5:50pm	30 min	<b>Extracting the elementary physics of suffusion from DEM simulations to enrich multi-scale constitutive models</b>	<b>Antonie Wautier</b> (INRAE, Aix Marseille University, France)
6:20pm	10 min	Short Break	
6:30pm	30 min	<b>Particle scale examination of fluid flow and particle movement in internally stable and unstable soils</b>	<b>Elisabeth Bowman</b> (University of Sheffield, UK)



Time	Duration	Topic	Speaker
7:00pm	30 min	<b>Observation of internal erosion in the triaxial cell and physical models - how to mimic the realistic situation in the lab?</b>	<b>Akihiro Takahashi</b> (Tokyo Institute of Technology, Japan)
<i>DISCUSSION</i>			
7:30pm	30 min	<b>What mechanisms are needed?</b>	<b>ALL</b>

### PROGRAM: 24<sup>th</sup> February – What are our current capabilities & progress?

Time	Duration	Topic	Speaker
<i>KEYNOTE LECTURE</i>			
5:00pm	45 min	<b>Modelling the impact of internal soil erosion on engineering structures and natural slopes</b>	<b>Pierre-Yves Hicher</b> (Ecole Centrale de Nantes, France)
<i>FEATURED LECTURE</i>			
5:45pm	30 min	<b>Particle-scale simulation of internal erosion processes</b>	<b>Adnan Sufian</b> (University of Queensland, Australia)
6:15pm	10 min	<i>Short Break</i>	
6:25pm	30 min	<b>The experimental and numerical evaluation of the internal erosion risk of a dam foundation in China</b>	<b>Gang Wang</b> (Chongqing University, China)
6:55pm	30 min	<b>Development of a constitutive modelling approach and an SPH computational framework for internal erosion</b>	<b>Giang Nguyen &amp; Ha Bui</b> (Adelaide and Monash Universities, Australia)
<i>DISCUSSION</i>			
7:25pm	30 min	<b>Our current capabilities</b>	<b>ALL</b>
<i>CLOSING REMARKS</i>			