



## TECHNICAL PROGRAMME

Thursday, 30<sup>th</sup> January 2025

### TRAINING COURSE

**8:00 – 8:30** *Registration*

**8:30 – 10:30** ANURA3D Training course – part 1

**10:30– 11:00** *Coffee Break*

**11:00 – 13:00** ANURA3D Training course – part 2

**13:00 – 14:00** *Lunch Break*

### ANURA3D WORKSHOP

**13:30 – 14:00** *Registration*

**14:00 – 14:20** ***Opening and introduction of the Anura3D MPM Research Community***

**N.M. Pinyol** Universitat Politècnica de Catalunya (Spain),

**F. Ceccato** Università degli Studi di Padova (Italy)

**A. Yerro** Virginia Tech (US)

**14:20 – 15:00** ***Invited lecture: “Simulating real landslides with MPM: best practices and challenges”***

**G. Di Carluccio**, Universitat Politècnica de Catalunya (Spain), **F. Ceccato**, Università degli Studi di Padova (Italy) and **A. Yerro**, Virginia Tech (US)

**15:00 – 16:00** *Session 1a*

Impact Loading Induced Long-runout Landslide: 3D Simulation on the Lanshibao Landslide

**Y. Chen\***, **F. Wang**

Simulating Retrogressive Failures of Sensitive Clay Landslide with NGI-ADP-Soft Model Using the Material Point Method

**E. Cheon\***, **Z. Liu**, **K. Huynh**

Thermally Induced Accelerated Landslides

**T. Zhang\***, **L. Lemus**, **N. Pinyol**, **G. Di Carluccio**

**16:00– 16:30** *Coffee Break*



**16:30 – 17:50** *Session 1b*

Forty Fort Levee Seepage and Stability Modeling with MPM

**K. Yost, Y. Peng\***

Design of Runout Protection Berms Using the Material Point Method

**O. Ledesma\*, E. Lieu, D. Hockley**

Modelling of Wetting-Induced Collapse

**N. Pinyol\*, G. Di Carluccio, L. Avilés**

MPM Modeling of Surface Fault Rupture Displacement Experiments

**R. Kompse\*, R. Moss**

**17:50 – 18:00** *Recap and discussion*

**20:00** *Dinner*

## **Friday, 31<sup>st</sup> January 2025**

**9:00 – 9:40** **Invited lecture: “MPM in Kratos multiphysics”**

**A. Larese**, Università degli Studi di Padova (TUM-IAS, Germany), Italy

**9:40 – 11:00** *Session 2a*

Simulation of Stava Tailing Dams Failure: Preliminary Results

**J. Lino da Silva\*, F. Ceccato**

An FEM-MPM Approach for Flowslide Runout Analysis

**Ali P. Babaki\*, Dwayne D. Tannant**

Tailings Dam Breach Analysis Using Material Point Method (MPM) for CDA Cases 2A and 2B

**E. Lino Ramirez\*, O. Ledesma, A. Lizcano**

Class A Prediction of Debris Flow Impact Forces on Protection Barriers: MPM Modelling

**S. Cuomo\*, A. Di Perna, M. Martinelli, C. Ng, R. De Silva, C. Choi**

**11:00 – 11:30** *Coffee Break*



**11:30 – 12:50** *Session 2b*

MPM Simulation of Soil Arching in Trapdoor Tests

**Y. Chen\***, **Y. Hwang**, **L. Ge**

Numerical Simulation of Trapdoor Underground Collapses Using Anura3D

**C. Karam**, **A. Yerro**, **J. Westcott**, **S. Samanta\***

Multidirectional Following Mesh and Associated Level Set Applied to Frictional Contact

**M. Maglia\***, **Gaia Di Carluccio**, **Núria M. Pinyol**

Impact of spherical rigid blocks on dry granular strata: insights from MPM analyses

**M. Zerbi\***, **P. Marveggio**

**12:50 – 13:00** *Recap and discussion*

**13:00 – 14:00** *Lunch Break*

**14:00 – 14:40** **Invited lecture:** “MPM Developments for Simulating Different Pile Installation Techniques”

**V. Galavi**, Witteveen+Bos, The Netherlands

**14:40 – 16:00** *Session 2c*

Application of Convected Particle Domain Interpolation Method for predicting installation dynamics of Offshore Vibratory Monopiles

**S. Giridharan\***, **D. Stolle**, **C. Moormann**

Improved neighbor search algorithm for efficiently locating material points in numerical simulations using the material point method (MPM)

**A. Chemelnizkij\***, **K. Smarsly**

A First Step to Addressing Volumetric Locking in MPM Portable Free Fall Penetrometer Models

**J. Moore\***, **A. Yerro-Colom**

Mitigating volumetric locking in IGA MPM

**A. Alsardi**, **A. Yerro\***

**16:00 – 16:30** *Coffee Break*

**16:30 – 16:45** **Anura3D v2025 release**

**M. Maglia**

**16:45 – 17:45** *Open Forum for feedback and discussion*

**17:45 – 18:00** *Closure*