



PROJECT RISE GEO-RAMP (H2020 MSCA-RISE-2014 GA 645665)

ONE DAY SCHOOL: BUILDING DISCRETE ELEMENT MODELS

UPC 18/10/2016

PROGRAM

Time	TITLE	SPEAKER
09.00-09.15	Opening	
09.15-10.45	Dynamic constraints on DEM model conception: from granular flow to quasi-static models	J.N. Roux (Lab Navier Paris)
10.45-11.00	Coffee break	
11.00-12.00	Filling the space: meshing for discrete elements	M.A. Celigueta (CIMNE)
12.00-13.00	Controlling the geometry and initial stress state of DEM models in the PFC framework	Sacha Eman (Itasca, France)
13.00-14.00	Comida / Lunch	
14.00-15.30	Developing robust DEM models to simulate element tests	C. O'Sullivan (IC, UK)
15.30-15.45	Coffee break	
15.45-17.00	DEM model building for geotechnical Boundary Value problems	M. Arroyo & J. Butlanska (UPC) / M. Ciantia (IC)
17.00-18.15	Building Dem models for slope stability analysis	C. W. Boon (Warwick) & S. Utili (Newcastle)
18.15-18.30	Closure	

Presentation

Geohazards – Risk Assessment, Mitigation and Prevention (GEO-RAMP) is a H2020 Research and Innovation Staff Exchange (RISE) project. One goal of the project is to generate new approaches to assess geohazards.

The discrete element method (DEM) is a numerical tool that has gained wider acceptance in the last decade as a practical platform for the analysis of geomechanical problems at multiple scales. Large displacements, breakage and fragmentation are features easily addressed within the method and of high significance in geohazard analysis. DEM models also reproduce a large variety of geomaterial response while needing relatively few input parameters.

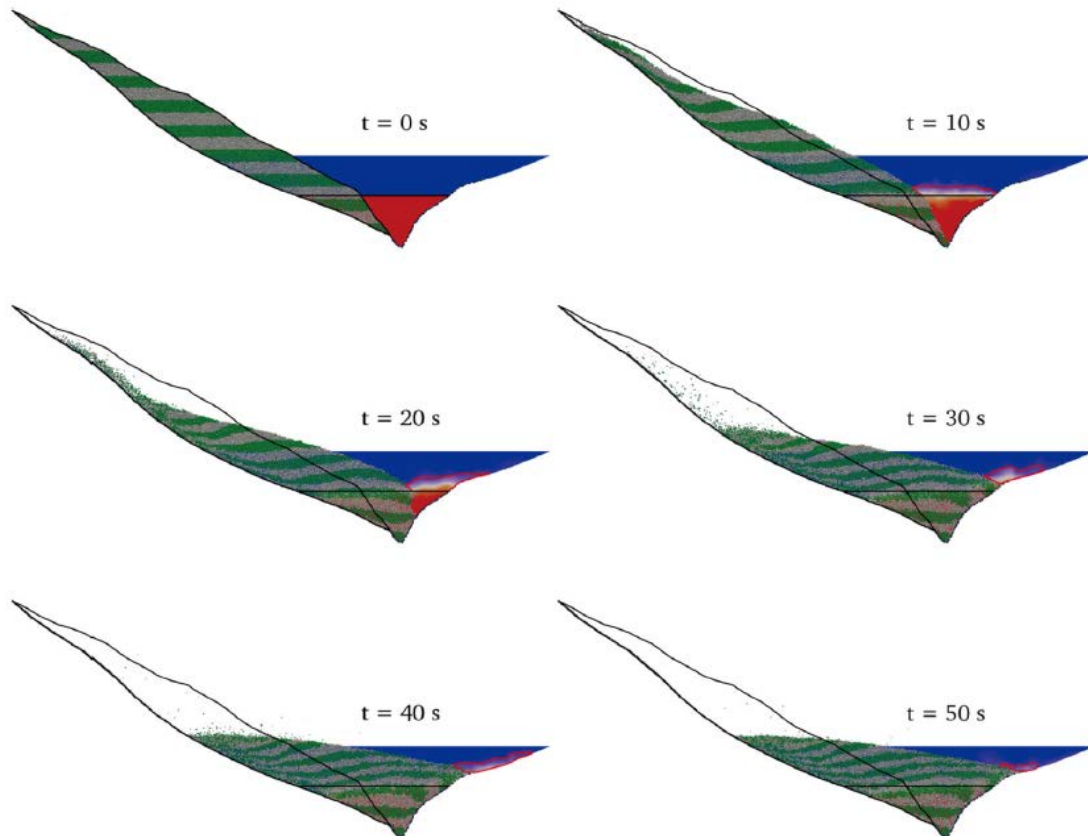
Despite these advantages the method has also some drawbacks. A significant one is related to the first modeling steps: selecting model geometry, initializing state, calibrating parameters, etc are very time consuming activities. Procedures appear less systematic, and good practice rules less easy to come by than in other, more traditional, numerical

methods. Problems ensue and sometimes are revealed only at a later stage, when the model results are being exploited.

This course aims to put DEM model building in geomechanics on a firmer ground. To this end it gathers a number of speakers, whose expertise covers several complementary aspects of the method (formulation, coding, application) and modelling platforms. The talks would offer a comprehensive and up-to-date perspective in the topic.

The course is most suitable for researchers and practitioners that have some previous acquaintance with DEM-based models and/or would like to increase their understanding of the possibilities and limitations of this powerful modelling tool.

Marcos Arroyo, Sacha Eman



Speakers

Prof. J.N. Roux, Lab Navier, France

Prof. C. O'Sullivan, Dr. Matteo Ciantia, Imperial College, UK

Prof. Marcos Arroyo, Dr. Joanna Butlanska, UPC, Spain

Dr. Sacha Eman, Itasca, France

Dr. M.A. Celigueta, CIMNE, Spain

Prof. Stefano Utili, Dr. C.W. Boon, Warwick University, UK

Conditions

Location: Course lessons will be held at Building D2, Campus Nord, UPC, Barcelona, Spain (for directions see <http://tinyurl.com/hogumdf>)

Date: 18 October 2016, Tuesday

Price: Inscriptions by GEO-RAMP partners 100€; Other inscriptions 120€. Documentation & catering included.

Inscriptions: course inscriptions are to be made through the following webpage <http://congress.cimne.com/GEORAMP/frontal/Registration.asp>