Two-day course on:

NUMERICAL MODELLING IN ROCK ENGINEERING

Course: It is offered by organizing committee of EUROCK 2014 Vigo with the participation of ROCSCIENCE inc. Participants will be provided with Phase2 and RS3 versions, they should bring their lap-top computer.

Presenters: The course will be taught in English by John Curran and Carlos Carranza-Torres, both with extensive experience in numerical modelling in a large number of projects world-wide.

Venue: The course will take place in the building; 'Centro Social Novacaixagalicia' (Policarpo Sanz, 24-26), in the town centre of Vigo (Spain).

Price: The price of the course is 750 € (VAT incl.). This includes the two day course and lunches and coffee-breaks during the two days of the course. Course participants are not obliged to apply for the parallel Rock Mechanics Symposium.

Schedule: The course schedule will be from 9:00am till 1:00pm with mid-morning coffee break, then lunch and will continue at 2:30pm till 6:00pm with an afternoon coffee break. It will take place on 25th and 26tyh May 2014.

Contact: eurock2014@orzancongres.com

Centro Social
Novacaixagalicia
Vigo (Spain)

The course on:

NUMERICAL MODELLING IN ROCK ENGINEERING

will take place the two previous days of the conference

Rock Mechanics and Rock Engineering: Structures on and in rock masses
European Rock Mechanics Symposium (EUROCK2014)
Vigo (Spain) 27-29 May 2014

EUROCK VIGO 2014

Organized by:

Sociedad Española de Mecánica de Rocas
(Spanish National Group for Rock Mechanics)
http://www.semr.es/

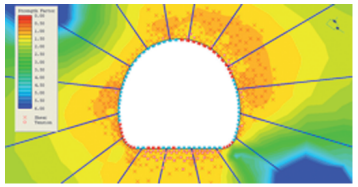
University of Vigo- School of Mines
http://minas.uvigo.es/

SHORT COURSE

NUMERICAL MODELLING IN ROCK ENGINEERING

25th-26th May 2014 Vigo, Spain

The objective of this course is to provide a background on the numerical modelling for rock engineering problems using two and three-dimensional finite element tools. The participants will be provided with Phase2 and RS3, state of the art 2- and 3-dimensional geotechnical software which are being used around the world.



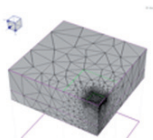
www.eurock2014.com

TWO DAY COURSE

NUMERICAL MODELLING IN ROCK ENGINEERING

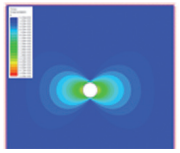
Contents:

Module I: Introduction to Finite Element Method for geotechnical problems



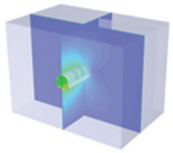
- Model development (construction of geometry, meshing, loads and boundary conditions, analysis options)
- Material models and constitutive relations
- Interpretation of results

Module II: Analysis of underground excavations using a two-dimensional approach (Phase2)



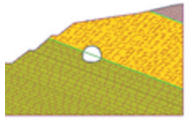
- Stress analysis
- Support types (bolts, liner, structural elements)
- Model development
- Interpretation of results

Module III: Support design for tunnels using three-dimensional FE tools (RS3)



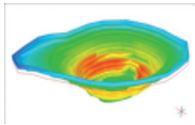
- Model development in 3D
- Sequence design
- 3D support elements (forepoles, liners, bolts, structural elements)
- Interpretation of results

Module IV: Continuum numerical modelling for jointed rock mass problems (Phase2)



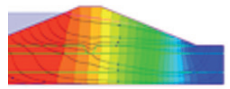
- Application of FEM to jointed rock mass
- Implicit vs. Explicit joint modelling
- Modelling of Discrete Fracture Networks (DFN)

Module V: Rock slope stability analysis using shear strength reduction method (Phase2 & RS3)



- Application of FEM to slope stability analysis
- Shear Strength Reduction approach
- Deep seated slope failure
- Blocky rock mass slopes

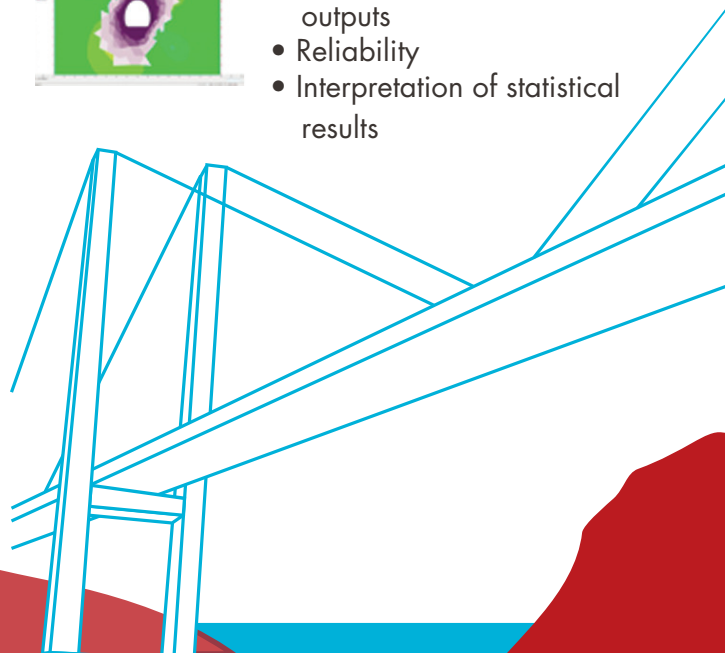
Module VI: Groundwater analysis (Phase2 & RS3)



- Saturated-Unsaturated transient groundwater analysis
- Permeability functions
- Boundary conditions
- Seepage analysis of staged excavations

Module VII: Probabilistic analysis for surface and underground excavations (Phase2)

- Principles of statistical analysis
- Probabilistic inputs and outputs
- Reliability
- Interpretation of statistical results



EUROCK VIGO 2014