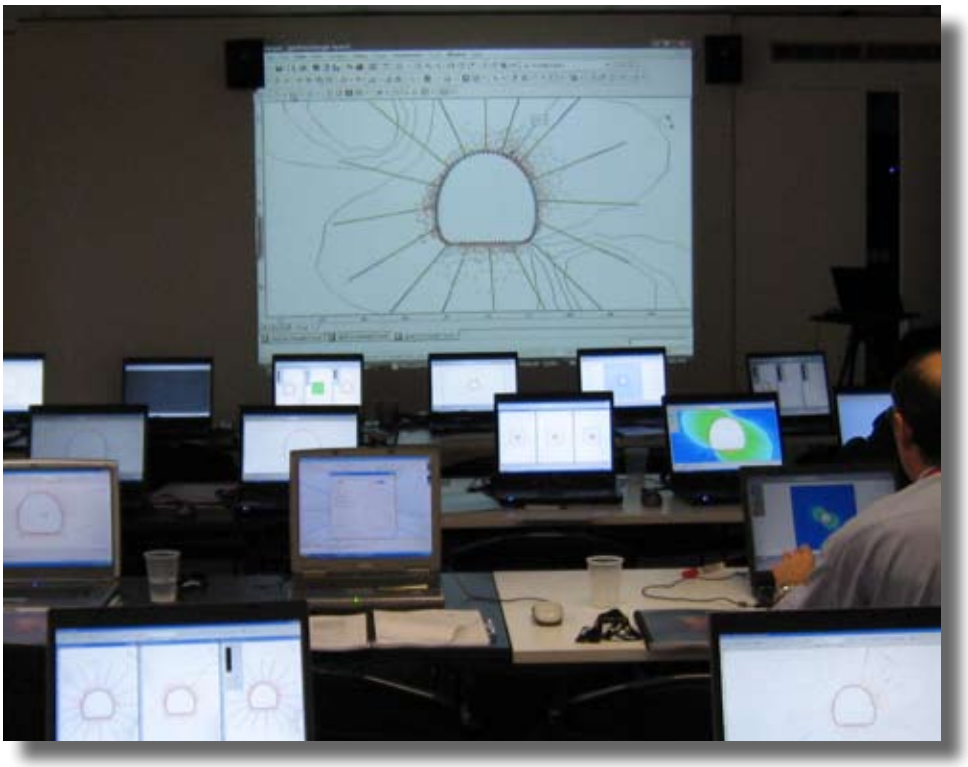
Two-Dimensional Finite Element Modelling of Slopes and Underground Excavations in Blocky Rock Masses

A comprehensive 1-day seminar presented by Rocscience Inc.

$350.00 CAD (minimum 10 participants)

How to build models that realistically simulate the behaviour of geotechnical excavations in blocky rock masses using *Phase²*. Specifically designed for engineers who seek to enhance their capabilities for modelling excavations in blocky rock masses.



Discontinuities can significantly influence the mechanical response of rock masses to loadings and excavation, especially in low stress environments (slopes and near surface excavations). In such cases, they have greater impact than intact rock properties. Although the idea of modelling rock masses with the Finite Element Method (FEM) and joint elements has been around since the 1960s, it is only recently that advances in computing power and improved numerical modelling technologies have made it possible to apply the FEM to routine rock engineering problem-solving.

The training seminar is designed to equip engineers with the skills necessary to perform finite element modelling of discontinuous (blocky) rock masses using *Phase²* . Course participants will learn to exploit powerful tools and features in *Phase²* to build models of slopes and underground excavations in blocky rock that capture real-world behaviour and provide useful information for design. These modelling features will include the automatic generation of joint networks, elements for simulating the sliding and opening of joints, and shear strength reduction (SSR) analysis. Participants will also learn to use *Phase²* to predict failure mechanisms for slopes and excavations. This is a difficult task that depends on many factors, including the strength and deformation properties of both intact rock and joints, and the distribution of joints.

At the end of the seminar, attendees will be able to harness the unique advantages of the FEM – ability to handle cases in which fractures terminate within intact rock and not only at intersections with other joints, and versatility in modelling a broad range of continuous and discontinuous rock mass behaviours – in developing solutions and ideas.