

Special issue on advances in modeling rock engineering problems

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Special Issue on Advances in Modeling Rock Engineering Problems

Marco Barla

Dept. of Structural, Building and Geotechnical Engineering, Politecnico di Torino, 10129 Torino, Italy (corresponding author). E-mail: marco.barla@polito.it

Gernot Beer

Institute for Structural Analysis, Graz Univ. of Technology, 8010 Graz, Austria.

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This special issue of the *International Journal of Geomechanics* contains contributions on advances in rock mechanics, rock slope stability, and tunneling. The broad topic selected for this special issue needed additional focus. This was done by selecting authors within the worldwide rock mechanics community and asking them to provide their latest advancement in modeling engineering problems. The guest editors believe that this goal was achieved, and that some insights and discussion may be stimulated after reading the authors' work.

This special issue includes nine papers and can be divided into three sections from the content point of view. The first section includes three papers devoted to the fundamental aspects in rock

mechanics, such as the calibration of advanced constitutive models and the impact of individual textural features on rock strength and fracture mechanics. The topic of geomechanical characterization of shear zones and cataclastic rocks, represented as a bimrock (block-in-matrix rock), is also covered in a specific paper.

The attention then moves directly to numerical modeling and to two methods that are currently receiving growing interest: the new advances of the boundary element method (BEM) and the potential of the combined finite-discrete element method (FDEM). While the BEM is described in view of possible applications to underground excavations, the FDEM is shown to play an important role in the study of processes that involve fracture propagation in the rock mass. These aspects are broadly covered in the second section.

Examples in numerical modeling of engineering problems constitute the third group of papers. The interest moves from tunneling to rock slope stability. This includes time dependency and damage aspects in tunneling, whereas the potential of the FDEM is shown with reference to the stability of a high rock cut.

In closing, the guest editors wish to thank all the authors for their effort and their patience in accepting the time consuming review process, and ASCE for publishing this stimulating special issue.