

Reply by the Author to Discussion

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In the discussion, three different comments are reported. The author is responding to each comment as follows.

In comment 1, it is stated that a fractured rock mass shows ductile and discontinuum behavior, according to Müller (1970).

Müller's definition (1970) is now outdated because the mechanical behavior of a rock mass, according to Hoek and Brown (1980), is based on the distinction between continuum and discontinuum. This distinction depends on the number of fractures in the rock mass: a continuum material is defined as intact rock as well as a highly fractured rock mass. In the technical note, the expression "continuum material" is used given that at both the sites, although the degree of fracturing is different, heavily jointed rock masses are present, as shown by the results of geological and geomechanical mapping.

In comment 2, it is stated that the relationship between UCS and effective porosity is valid only for saturated materials and not for specimens in dry conditions, such as reported in the technical note.

The author is of the opinion that the relation between UCS and effective porosity is useful because, in the rock under study, the porosity is mainly due to the fractures (and

not to the voids), which develop a micro-network and affect the UCS value.

In comment 3, a multivariate regression of the data is proposed. It is stated that this method is useful in cases where complex relations are involved (Karakus et al. 2005).

The author is of the opinion that higher coefficients of determination indicate the reliability of the data. Furthermore, the author is of the opinion that the use of a simple regression is more appropriate in order to understand the influence of each property on the rock mechanical behavior. In fact, as shown in the technical note, UCS and E are affected in a different manner.

References

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