MODELLING OF THE SCALE EFFECT IN MASS ROCK WITH A CASE STUDY IN THE BAIA MARE AREA (NW ROMANIA)

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The paper presents some problems, aspects and novelties related to the modelling of the scale effect in mass rock (Hoek-Brown and Palmstrom criteria, HOEK & BROWN, 1997; PALMSTROM, 1997), along with a case study on fissured massifs from the Baia Mare area, NW Romania, at different values of the RMR parameter.

A matter of permanent interest for ecological engineering in mining zones is the way in which rocks behave in the massif. Such data are important for an economic sizing of the support of mines, as well as for the preservation of the zones after exploitation.

The discipline "resistance of rocks" means decision in certain matters such as stability and deformation resistance of the massifs in the presence of mining works.

The correlation of laboratory data with practical situation is confronted with many difficulties connected to the modelling of the so-called "scale effect".

The traditional procedure consisting of the non-discriminating application of a "reducing coefficient" has often proved to be non-economic and insecure.

Recent research, which led to the elaboration of different indices (e.g. RMR, "Rock Mass Ration", RMI) with regard to the behaviour of rocks in the massif, and the stability criteria recommend more flexible ways of estimating the massif resistance.

In the case study, after the laboratory determination of the RMR parameter and the values of resistance to compression of andesites and sedimentary rocks often seen in the Baia Mare mining area, the differences between the results obtained through the application of the theoretical methods included in our paper are concisely presented.

References
HOEK, E. & BROWN, E.T. (1997). Int. J. Rock Mech. Min. Sci. & Geomech. Abstr., **34/8.**
PALMSTROM, A. (1997). New Journal, International Society for Rock Mechanics, **4/2.**