عنوان مقاله:

Rock mass structural data analysis using image processing techniques (Case study: Choghart iron ore mine northern slopes)

نویسندگان:

M. Mohebbi - *Department of Mining Engineering, Yazd University, Yazd, Iran*

A.R. Yarahmadi Bafghi - *Department of Mining Engineering, Yazd University, Yazd, Iran*

M. Fatehi Marji - *Department of Mining Engineering, Yazd University, Yazd, Iran*

J. Gholamnejad - *Department of Mining Engineering, Yazd University, Yazd, Iran*

خلاصه مقاله:

Presence of joints and fractures in rocks strongly influences the behavior of the rock mass by dividing the media into smaller units. These structures intensify the potential instability besides the development of sliding and rotational movements. The assumption of discontinuum media changes the whole analysis conditions in relation to the continuum analysis. Acquisition of geometrical and structural discontinuity data alongside their mechanical properties is of paramount importance in a rock mass analysis. Orientation, spacing, expansion, and other geometrical characteristics of the rock mass and their relative geometrical position to the studied projects influence the pattern and potential of failure. Therefore, inevitably, the first step involved in the analysis of rock mass is geometric data collection of the discontinuities as a crucial step before analysis. In this study, the traditional data collection methods in structural discontinuities with their disadvantages are reviewed. Then the discontinuity data collection based on digital image analysis is developed and applied in a case study to several walls of the Choghart iron ore mine. The results obtained show that this method has a very good accuracy in assessing the fine structures, and also it collects data in a much shorter time. This study, therefore, suggests that the proposed method can be used as a practical approach.

کلمات کلیدی:

Joint Mapping, Digital Image Analysis, Choghart Iron Ore Mine

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