

عنوان مقاله:

Determining the fragmentation of mineral by digital image analysis in Sungun copper mine

محل انتشار:

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خلاصه مقاله:

Fragmentation of rock is one of the most important outcomes and goals of blasting in open-pit mine to obtain the desired product for loading and crushing stages. Fragmentation resulting from blasting is influenced by various factors, including intrinsic and uncontrollable parameters of the rock mass and controllable parameters such as specific charge. Presenting an efficient model due to the combined effect of multiple parameters in rock fragmentation is a complex issue. The modified Kuz-Ram model, employing the explosive capability index, involves more factors of the rock mass in fragmentation and is considered among the applicable models. To determine the fragmentation resulting from blasting using image analysis, the crushed rock mass is first photographed, and ultimately, with the help of analysis software, the size distribution curve is plotted. In this study, the size distribution curve and the average dimensions of the mineral fragments ( $X_{50}$ ) were determined using image analysis and the Split Desktop software, one of the most up-to-date image analysis software after fragmentation. These results were compared with the modified Kuz-Ram model in the Sungun copper mine. The obtained results indicate that the average size of the fragmented pieces in the image analysis method (۲۷.۵۶ cm) are greater than the results obtained from the modified Kuz-Ram model (۲۰.۹۲ cm).

کلمات کلیدی:

Fragmentation, Digital Image Analysis Method, Split Desktop Software, Sungun Copper Mine, Modified Kuz-Ram Model

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