

عنوان مقاله:

Numerical Analysis of the Primer Location Effect on Ground Vibration Caused by Blasting

محل انتشار:

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خلاصه مقاله:

Ground vibration is one of the undesirable results of blasting operations. Different methods have been proposed to predict and control ground vibration that is caused by blasting. These methods can be classified as laboratory studies, fieldwork and numerical modeling. Among these methods, numerical modeling is the one which saves time and cuts costs since it takes into account the basic principles of mechanics and provides step by step time-domain solutions. In order to use numerical analysis in predicting the results of blasting operations, the accuracy of the output must be verified through field test. In this study, ground vibration caused by blasting in a field operation in Miduk Copper Mine was recorded using 3-components seismometers of the Vibracord seismograph and analyzed by Vibration-Meter software. Propagation of the waves caused by blasting in the mine slope was modeled using discrete element logic in the UDEC numerical software and compared to the results of the field test. Having tested the accuracy of the results obtained, the effect of primer location and the direction of detonation propagation in the blast hole on the rate of ground vibration caused by blasting was investigated. The results show that by changing primer location from the .bottom of the hole to its top, the rate of ground vibration caused by blasting increases

کلمات کلیدی:

Blasting, Ground vibration, numerical modeling, primer, Vibracord seismograph

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