

Application of Ground Penetrating Radar with Envelope Attribute in Block Caving - Underground Mine for Determining Continuity of Damage Zones

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Abstract

The induced stress of underground block cave mine such as blasting, mucking activities, and abutment stress have impacted some tunnels in production level (panels) to be damaged. The panels then have to be repaired in order to continue the production stage. Panel 1K (P-1K) North Deep Ore Zone (DOZ) mine was one of the panels that had damage and repair process was needed.

In term for determining the damage zone in panel like damage penetration and its continuity, analysis and recommendation have to be made for operation team as a guide to repair the panel in accordance to decide type and dimension of ground support that will be additionally installed for improving the stability in the damage area.

The purpose of this study is to image and assess the continuity of damage zone with using Ground Penetrating Radar reflection traces and also its envelope attribute traces. For enhancing the result analysis, a reflection model has been created in the first processing stage by using the RQD model and also a borehole camera survey has been deployed in one of acquisition lines to ensure the correlation and result.