

## **Characterisation of rock mass fragmentation for block-cave mining**

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Block-cave mining is a capital-intensive mining method that requires reliable models to manage risk and to build trust with investors. Cave mining operations are strongly influenced by the heterogeneous nature of rock masses, including the spatial variability of fracture networks, which have significant implications in rock mass fragmentation. This study uses an in-situ fragmentation model that was generated based on Discrete Fracture Network (DFN) models. The volumetric fracture intensity value ( $P_{32}$ ), derived from the DFN models, is used to characterise the rock mass structure, which is linked to rock mass fragmentation. Major structures are included in the model parameters in a deterministic manner and the output (the spatial variability of fracture intensity) is used to derive a geostatistical model of rock mass fragmentation. The fragmentation 'block model' was subsequently superimposed on a PCBC draw schedule model to link fragmentation and height of draw. Using field measurements of secondary fragmentation, this study will investigate the possible links between natural fragmentation, secondary fragmentation, height of draw and observed hang-ups.