Numerical Modeling of Mining Sequences and Seismicity

CIVIL • ENVIRONMENTAL • MANUFACTURING • **MINING** • OIL & GAS • POWER GENERATION

PROJECT DESCRIPTION

LKAB

Kiirunavaara Mine, Sweden

3DEC™

KUBRIX Geo®

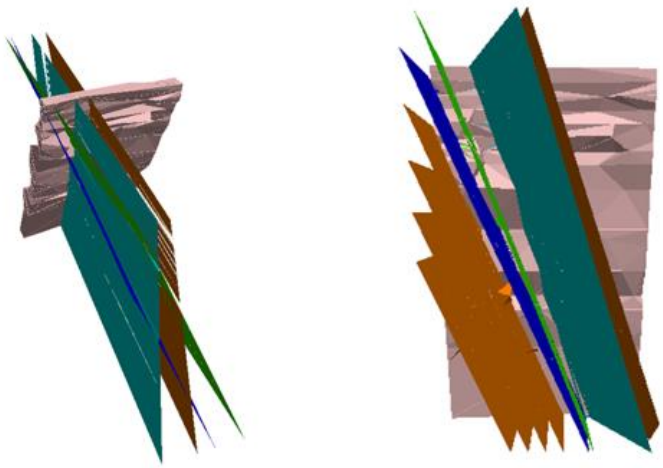
Mining-induced seismicity is one of the most serious rock mechanics problems in sublevel caving in the LKAB mine in Kiruna.

ITASCA'S ROLE

In this project, alternative mining sequences for a portion of the mine have been simulated using a three-dimensional numerical model. Large-scale geological structures have been explicitly included in the model to simulate the occurrence of "fault slip" type seismic events. Calculations have been conducted using *3DEC*.

PROJECT RESULTS

The results have been used to recommend a mining strategy for future extraction in this portion of the mine to (as far as possible) minimize mining-induced seismicity.



Model of a portion of the Kiirunavaara orebody including large-scale geological structures

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