

Development of criteria due to seismic risk for temporary closing/re-opening of seismically active mines

Utveckling av kriterier på grund av seismiska risker för tillfällig stängning / återuppstart seismiskt aktiva gruvor

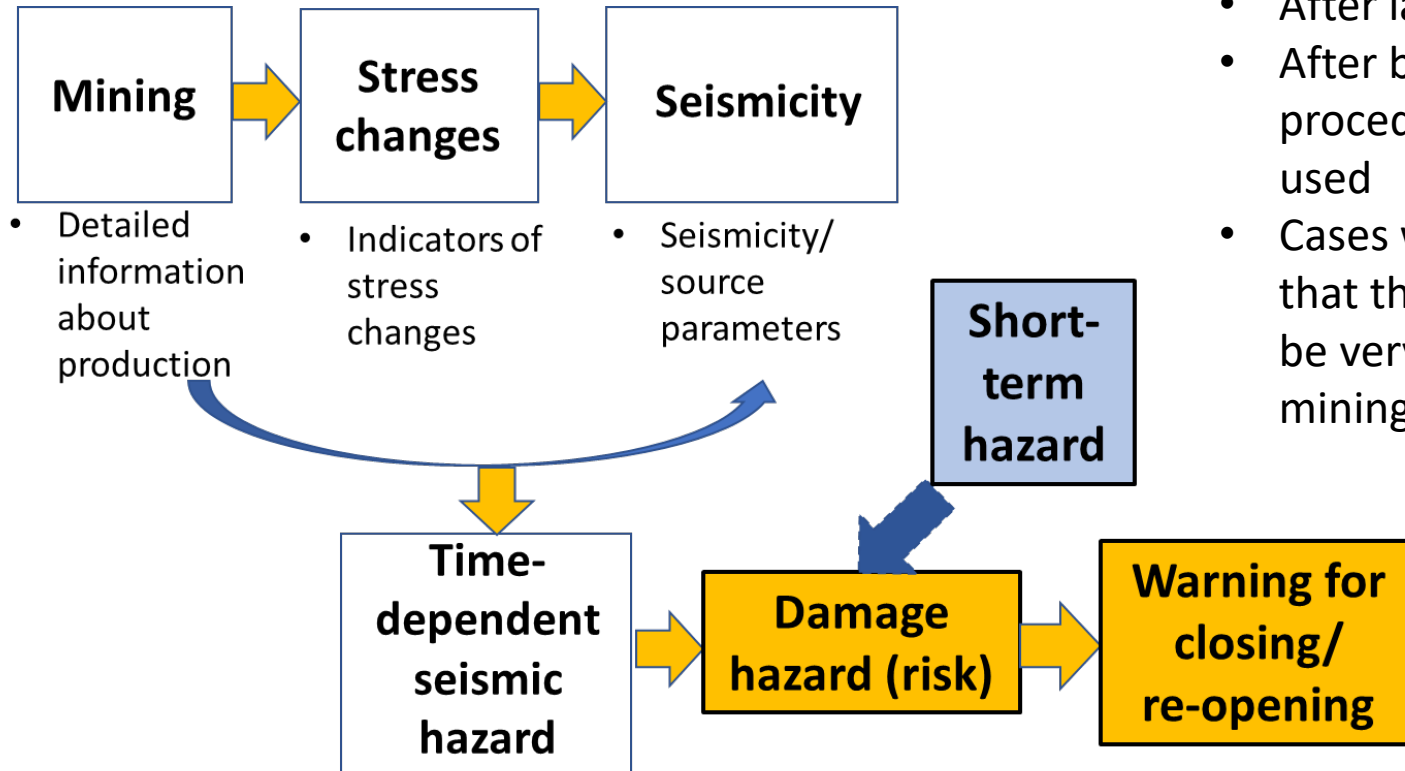


Purpose and goal of the project

To develop methods and possible criteria for increased **seismic and damage hazard** and recommendations for closing certain areas in the mines, and subsequent re-opening based on relationships between

- mining process,
- seismic hazard, and
- potential damage.

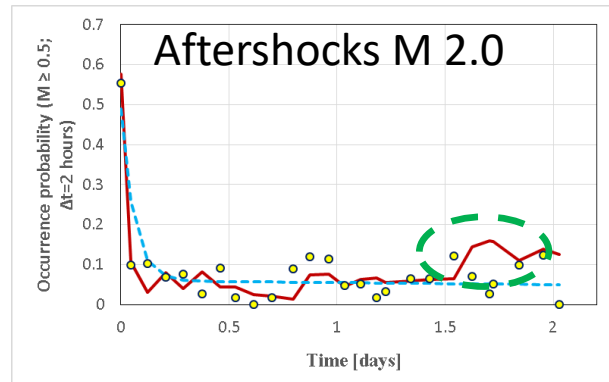
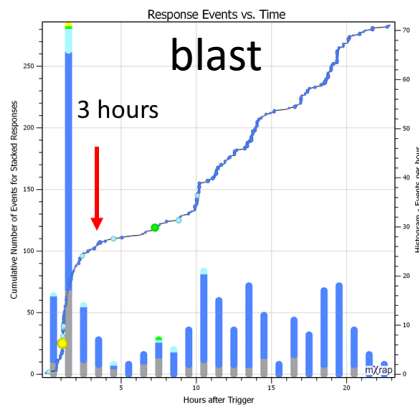
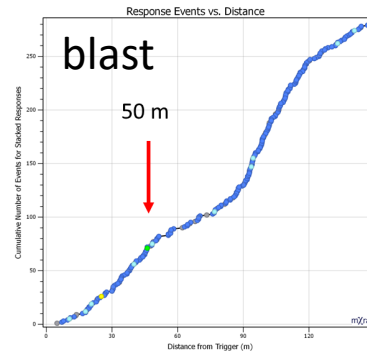
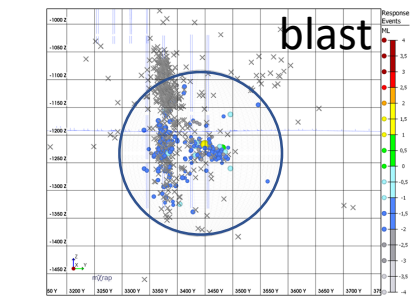
Purpose and goal of the project



Cases for closing:

- Before large events
- After large events
- After blasting – a procedure is already used
- Cases when it is proven that the stresses will be very high during mining

Special attention to post-blast seismicity and aftershocks of larger seismic events



- Spatial and temporal distribution of seismic events after blasting
- Average models of post-blast seismicity
- Similarly, average models of aftershock series after larger seismic events
- Modelling of the development of the aftershock series (in space and time)
- **Relationships between the production parameters and induced seismicity**

The way forward

1. Joint analysis and correlations (synthesis of the results)

-Correlation between mining activities, local stress changes and seismic hazard

-Correlation between seismic hazard, local conditions, and damage potential and development of new methodology for estimation of future damage (damage potential) based on the new results above.

-Development of new improved strategy for the assessment of time-dependent seismic hazard and damage potential related to the current and past mining operations

2. Formulation of criteria for mine areas closing/re-opening due to the risk of damage

3. Development of new plugins for mXrap software