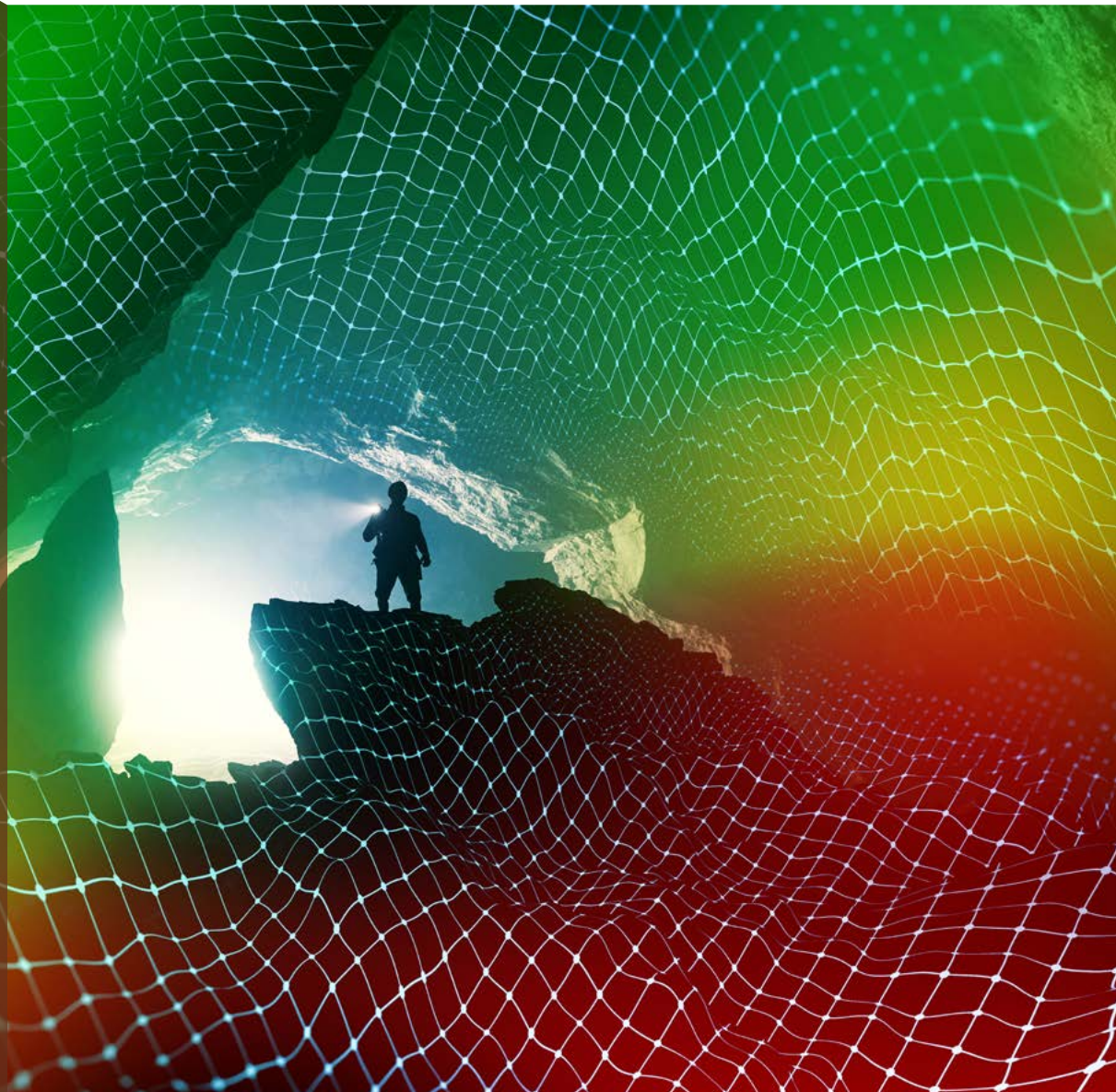


Rock Engineering Department

Rock mass monitoring for safe mineral extraction

- + Support for **underground mining operations**
- + Monitoring and forecasting of **seismic hazards**
- + Risk assessment of **industrial waste disposal facilities**
- + **Blasting design** and **optimisation.**



Our Services

The Department's core expertise covers **geomechanics, geotechnics, mining geophysics** and **blasting engineering**. We carry out advanced numerical analyses of **geomechanical hazards** arising under a wide range of geological and mining conditions associated with underground extraction. Our work includes **seismic forecasting** addressing both the direct and indirect impacts of mining operations on the ground surface and on underground infrastructure. In addition, we undertake **risk assessments for industrial waste disposal facilities** and **provide specialist consultancy services for the comprehensive design of blasting operations** in both underground and open-pit mines.

Geomechanics

- + **Computer modelling of rock mass behaviour** in the vicinity of underground mine workings and extraction fronts.
- + **Numerical forecasting of stress and displacement states** within the rock mass, with particular regard to hazards such as rock mass tremors, rockbursts and collapses.

Mining Geophysics

- + **Seismic forecasting** related to ongoing mineral extraction and **downhole investigations** in mining geophysics.
- + **Environmental reports** assessing the impact of dynamic seismic vibrations on the surface of mining areas and on underground structures.

Geotechnics

- + **Numerical analyses** of slope and embankment stability, as well as the stability of large-span underground chambers.
- + **Theoretical analyses** and investigations related to risk assessment of the operation of industrial waste disposal facilities.

Blasting engineering

- + **In situ testing of explosives** to verify compliance with parameters declared by manufacturers.
- + **Design of blasting patterns**, including **optimisation of blasting parameters**.

We hold certified expert authorisations for mine operations in the following groups: XII – blasting works, XIII – rock bolting systems XIX – rockburst hazards and XXI – testing of technical solutions preceding the introduction of new mining systems for copper, zinc and lead ores or variants of these systems.

Contact us

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