

Master's Thesis (MA, 30 ECTS)

Working Title Acoustic Emission Test (AET) evaluations to investigate rockburst

Description

As modern tunnelling and mining projects are exploring deeper areas than ever before, it is necessary to learn more about the hazard of rockburst. This type of failure is extremely dangerous, as it can occur very suddenly and is capable of releasing high amounts of energy. As this is a high risk for the life of workers and the used equipment, it is very important to fully understand rockburst and find methods to predict it.

As part of a research project to learn more about rockburst, uniaxial compression tests are carried out on selected rock samples. During those tests, sensors for detecting acoustic emissions are attached to the testing samples to assess, if micro-cracks occur, and if so, at what location within the probe.

The goal of the master thesis is to evaluate the acoustic emission tests in regard of their connection with rockburst.

As part of this research project, other master's theses have already been completed; therefore, a considerable knowledge base already exists. There is also a MATLAB-Code that can be used for the evaluation, if necessary this code has to be modified.

For this thesis, advanced MATLAB capabilities and/or computer programming skills are necessary.

Templates for the scientific report can be found on the institute's homepage. There is also a guideline for scientific writing that can be downloaded from this homepage. The thesis may be written in English or in German.

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Start immediately / by appointment

Duration approx. 6 months

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