

Graz University of Technology  
Institute for Rock Mechanics and Tunnelling

# Master Thesis (MA, 30 ECTS)

TBM Data Analysis – Gemeinschaftskraftwerk INN

## Description

As part of the hydropower project “Gemeinschaftskraftwerk INN” in the Tyrolean Upper Inn Valley, over 20km of water tunnels were excavated by double shield tunnel boring machines. The excavation was done in folded and faulted rocks of the Bündner Schists and a big amount of TBM data as well as geological information was collected.

The goal of this thesis is to process and analyze the TBM operational data, digitize geological tunnel wall mappings and correlate one to another. It should be analyzed how the geology is reflected within the TBM data and analysis with a critical few to current literature and developments shall be conducted.

## Workflow:

1. Compiling information about the project area and the excavation.
2. Digitization of geological tunnel wall mappings.
3. Processing and analysis of TBM data.
4. Finding correlations between the TBM data and the geology.
5. Compiling and summarizing the results in the final Master's thesis.

Due to the big amount of data, the analysis will require skills beyond MS Excel. Programming skills (Python) are recommended but can also be acquired during the thesis.

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