

Damage mechanisms during gallery excavation in Opalinus clay formation at the Mont Terri Underground Rock Laboratory (Switzerland)

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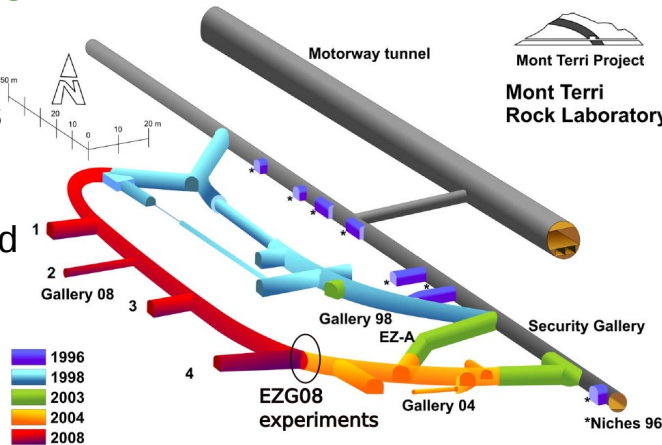
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Context and objectives

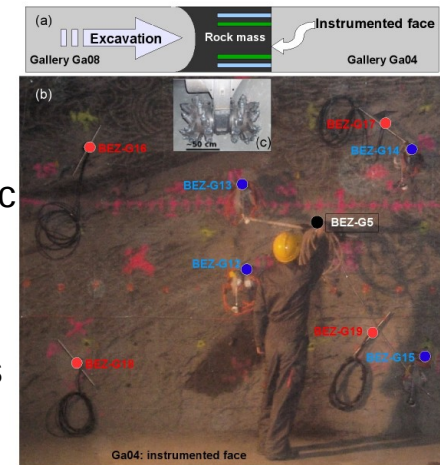
- Summer 2008 : excavation of the gallery Ga08 in the Opalinus clay formation joining the end-face of the gallery Ga04
- End-face of Ga04 instrumented with acoustic arrays

➔ **Monitoring of the evolution of the EDZ around a new gallery**



Acoustic setup

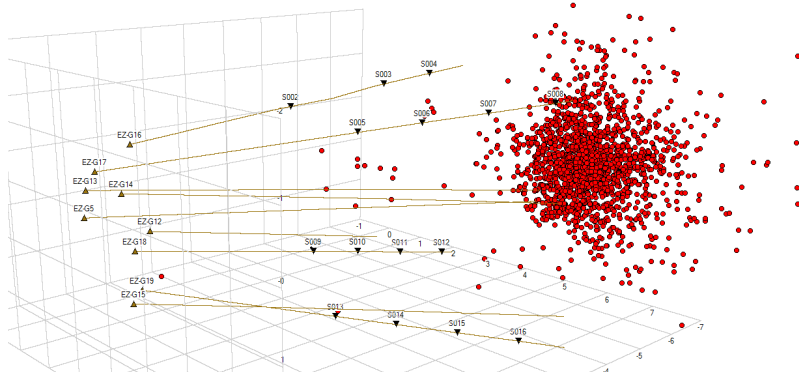
- Acoustic source in BEZ-G5 borehole
- 16 wideband acoustic transducers in 4 boreholes
- Simultaneous multichannel recordings



Le Gonidec et al. submitted

Location of AE sources

Procedure validated from ultrasonic measurements
More than 1776 events (manually identified)



AE source mechanisms

- Analysis on 14 AE events (central volume)
- Plotted in a Hudson T-k diagram
- Error ellipses

➔ **Tensile and shear mechanisms**

