Mont Terri Rock Laboratory

Field report: July 18–August 21, 2022 (Phase 28)

CD-A (Influence of Humidity on Cyclic and Long-Term Deformations) experiment
- On Monday, July 18, A. Degiacomi and S. Schefer (swisstopo) installed 5 levelling points along the axis of the Closed Twin Niche (Figure 1).
- On Thursday, August 18, D. Rebscher (BGR) and F. Reichertz (Merritt College) fixed the platform tiltmeter in Niche Open Twin.

DR-B (Long-Term Diffusion) experiment
- On Thursday, July 28, R. Wüest (Nagra) together with T. Theurillat and A. Degiacomi (swisstopo) replaced a part of the XRF-probe and tested the device.

ES (Electrical and Seismic Signature of Opalinus Clay Subjected to Desiccation and Deformation) experiment
- On Tuesday, A. Eul and J. Eul (Eul GmbH) installed the drill rig close to Niche C in Ga98 to drill a sampling borehole (Figure 2).
- On Wednesday and Thursday, the drilling of BES-1 reached its final depth of 18 m (diameter 131 mm). PX. Meury (GéoEnvironnement) performed the mapping and documentation, A. Degiacomi and S. Schefer (swisstopo) sampled the cores for TotalEnergies and EPFL (Figure 3).
- The borehole BES-1 starts in the lower sandy facies, reaches the carbonate-rich sandy facies at 9 m and the lower shaly facies at 13.8 m.

FE-M (Long-Term Monitoring of the Full-Scale Emplacement Experiment) experiment
- On Friday, August 19, A. Guzik (Neubrex) replaced an external drive to analyse the data.

FS-B (Imaging the Long-Term Loss of Faulted Host Rock Integrity) experiment
- On Monday and Friday, August 15, D. Rebscher (BGR) and F. Reichertz (Merritt College) performed maintenance on several tiltmeters and levelled the AGI-tiltmeter close to the Main Fault.

MA-A (Modular Platform for Microbial Studies) experiment
- On Thursday, August 18, C. Rolland (EPFL) was on site to sample BMA-A1 and BMA-A2. She also performed some maintenance on the glovebox.

PF (Progressive Rock Mass Failure and Overbreak Sealing) experiment
- On Tuesday and Wednesday, A. Degiacomi (swisstopo) built a rock fall protection for the fibre-optic cables on a sled inside BPF-7.
- On Thursday, M. Ziegler turned the ventilation inside BPF-7 off. This marks the beginning of the second phase of the experiment.
- On Friday, August 19, A. Guzik (Neubrex) and M. Ziegler (swisstopo) measured the fibre-optic sensors inside BPF-7 (Figure 4). This is the first measurement after stopping the ventilation.
SM-C (Permanent Nanoseismic Monitoring) experiment
- From Monday to Friday, August 15-19, D. Rebscher (BGR) and F. Reichertz (Merritt College) performed maintenance work on the tiltmeter network. These tiltmeters are used in several experiments for long-term movements and short-termed events equally (Figure 5).

SW-A (Large-Scale Sandwich Seal in Opalinus Clay) experiment
- Every Tuesday and Friday, T. Theurillat, A. Degiacomi or S. Schefer (swisstopo) refilled the high pressure tank.

Varia
- Tuesday, August 2, marked the last day of Andri Degiacomi as a civil servant in Mont Terri. He resumes his studies at ETHZ for a master in geology. We are grateful for all the great work he did with us (Figure 1, including many nice pictures for the weekly report!) and wish him good luck for the future.
- During the summer break, T. Theurillat (swisstopo) together with Zuber Sàrl removed the doors of the old survival chamber in Ga98 and levelled the floor at the two entrances.
- On Monday, August 15, we welcomed Thierry Meister as our new civil servant. He comes from Geneva and will be staying with us until Mid-October (Figure 6).
- On Monday, August 15, we had to replace the firewall of the Mont Terri network. Unfortunately we ran into some problems with the incoming connections. Therefore, some experiments were unreachable from the outside until Friday morning. The data acquisition should not have been affected. We apologize for the inconvenience!

D. Jaeggi and S. Schefer, August 20, 2022

Visits

<table>
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<tr>
<th>Day</th>
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<th>Number</th>
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<tr>
<td>Wed</td>
<td>20.07.2022</td>
<td>Kanton Zürich, M. Neukom, Th. Forrer, Regierungsrat &amp; Kantonsrat</td>
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<tr>
<td>Thu</td>
<td>18.08.2022</td>
<td>Office fédéral de la statistique OFS, section GEO</td>
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<td>Reko-Team Empa-Eawag</td>
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Figure 1: CD-A: A. Degiacomi is drilling the levelling points inside Niche Closed Twin (Photo: S. Schefer, swisstopo).

Figure 2: ES: Father and son and a drilling machine (Photo: A. Degiacomi, swisstopo).
Figure 3: **ES:** Conditioning of the cores from BES-1 (Photo: A. Degiacomi, swisstopo).

Figure 4: **PF:** A. Guzik and M. Ziegler preparing for the measurements (Photo: T. Meister, swisstopo).
Figure 5: **SM-C:** D. Rebscher and F. Reichertz are fixing a tiltmeter (Photo: S. Schefer, swisstopo).

Figure 6: **Varia:** Welcome to Mont Terri, Thierry Meister! (Photo: S. Schefer, swisstopo).