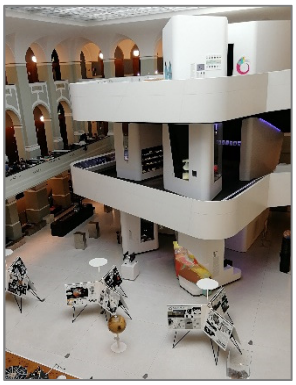
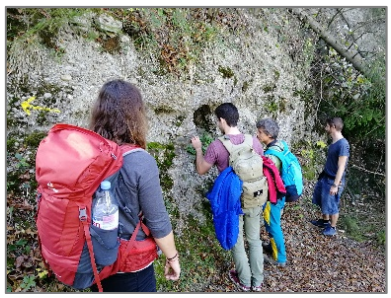
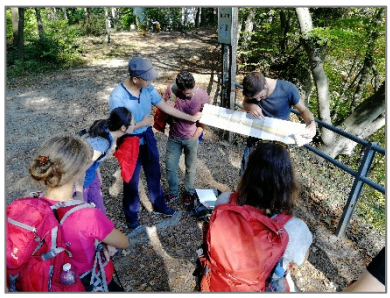
YG excursion: Neogene evolution of the Molasse Basin



On Friday (12.10.2018) the group met at the Earth Science Department of ETH Zurich and its museum *focus*Terra. We socialized over coffee and had a tour through the museum with focus on evolution of the Alpine orogen and also a visit to the earthquake simulator. The tour was given by the organizers Julia Krawielicki (YG representative) and Sascha Winterberg (doctoral student in surface dynamics). The museum visit prepared us for the geological features during the hike and gave context to the morphology of the Zurich area.

We picked up participants from Lausanne at the Oldtown hostel Otter where the visiting students stayed. Afterwards the group received a special tour through Zurich by Sascha who shared his passion for history with the group. Since the weather was in our favor we could enjoy drinks and fresh air in town squares after dinner. The evening gave room for exchange with a flow of four languages and stories about the Alps and student life.





On Saturday (13.10.2018) the group got up early to meet at Bellevue tram station. We took the tram to Albisgüetli and hiked up to Uetliberg through the forest. Fallen trees made part of the trip into an obstacle course but participants bravely mastered allhurdles. Along the hike Sascha explained the main stages of Alpine orogenesis and explained observations and controversies of the Swiss Molasse.

The Swiss Molasse Basin forms the subsurface of the densely populated Swiss Mittelland. The Molasse represents the Oligocene to mid Miocene foreland basin of the Alps that was subsequently uplifted. The Molasse wedge propagated the tectonic stresses from the Alps towards the Jura, where they caused a folding of the Mesozoic sediments. The Molasse basin itself was uplifted some 900 m by this wedge process. The drainage network in the Molasse Basin was strongly affected by the uplift, and with the drainage network the ability of sediment transport. The perturbations in the Molasse Basin changed the river network at a continental scale.

When we reached the top of Uetliberg, the group had a very welcome picknick and time to enjoy the sunshine. The perfect view on the top was then used by Sascha to enlarge our new knowledge from small local outcrops to greater morphology. He introduced interpretations about the evolution of the Swiss Molasse, uplift and erosion with his own doctoral study of river incision.

We then walked along the Planetenweg which shows the distances between the planets of our solar system and gives information about their major features. It also leads to sites with great views of the area into the forest where we took a turn towards the Fallätsche, a steep actively erosional valley

that again challenged our hiking abilities. When reaching civilization again we took the train from Leimbach back to the city center where we ended the day with snacks and beer by the lake.

The topic of Swiss Molasse is often overlooked due to the many great geological features in the Alps. This trip aimed to bring its context and controversies into focus and spark interest. We gave understanding of its diverse questions through different approaches from theory of the Alps to observations of outcrops and morphology. In addition, the great spirit of this adventurous and open-minded group and the fun explanations of Sascha made this excursion lively and very enjoyable.