transgression. Regional and local models have been elaborated for the time span between 8 000 and 3 000 cal BP – a time of rapid sea level rise. As key areas for local models served the Wismar Bight, the Darss–Zingst Peninsula, and Rügen Island.

Rockslide mechanics reconstruction using FEM and photoplastic modelling

Hartvich F.[1], Poul I.[2] and Košťák B.[1]

[1]*Institute of rock structure and mechanics, Academy of Sciences of the Czech Republic, V Holešovičkách 41, Prague 8, 182 09, Czech Republic, hartvich@irsm.cas.cz*
[2]*Czech geological survey, branch Brno, Leitnerova 22, Brno,658 69 Czech Republic*

On a steep eastern slope under a Celtic site of Obří Hrad in the Šumava Mts. (South Bohemia), a complex, multi-generation rockslide was identified. Detailed mapping of the site revealed several systems of rockslide scarps, corresponding to respective deformation generations. Following research was aimed to assess the current behaviour of the slope and likely mechanics of the rockslide. Reconstruction was difficult as the rockslides were not very fresh, and the accumulations were practically removed by the fluvial processes from the narrow valley floor. Numerous research methods were applied. The depth and profile of the potentially unstable slope was investigated using geophysical methods. Several monitoring systems to assess the current movements were installed, including automatic extensometers, rod dilatometers and steel tape extensometers. Detailed measurements of tectonic joints and foliation structures were performed to investigate geometrical predispositions for sliding. Relative dating of the scarps was performed using the Schmidthammer test, comparing the scarps to other exposed rocks. Based on these analyses, a hypothesis on the rockslide formation and mechanics was formulated and tested using two independent methods: FEM calculations in the FLAC software, and photoplastic models, simulating the behaviour of the tectonically fractured rock massif. The preliminary results of these techniques illustrate the possible mechanics of the sliding while the monitoring systems offer a frame for the timescale of the events.

Changing seasonality patterns from Miocene Climate Optimum to Miocene Climate Transition deduced from the Crassostrea isotope archive

Harzhauser M.[1], Piller W.E.[2] and Grunert P.[2]

[1]*Natural History Museum Vienna, Geological-Paleontological Department, Burgring 7, A-1010 Vienna,*
[2]*Institute of Earth Sciences, Graz University, Heinrichstrasse 26, A-8010 Graz*

The Western Tethyan estuarine oyster *Crassostrea gryphoides* (Schlotheim, 1813) is geologically long lived. Appearing in the Oligocene it persists up to the Pliocene in the entire Western Tethys. With sizes of over 80 cm length, it is the largest Miocene bivalve in the Western Tethys Region. Its modern congeners are economically important in shellfish farming. Therefore, numerous studies focused on the biology and ecology of *Crassostrea* including several sclerochronological studies Herein we measured 5 shells from the Miocene Climate Optimum (MCO) and the subsequent Miocene Climate Transition (MCT) to evaluate changes of seasonality patterns.

MCO shells exhibit highly regular seasonal rhythms of warm-wet and dry-cool seasons. Optimal conditions resulted in extraordinary growth rates. Estuarine waters during the MCO in Central Europe display a seasonal temperature range of c. 9-10°C. Absolute water temperatures have ranged from 17-19°C during cool seasons and up to 28°C in warm seasons. Already during the early phase of the MCO, the growth rates are declining. Still, a very regular and well expressed seasonality is dominating, but extreme climate events did occur. The seasonal temperature range is still c. 9°C but the cool season temperature is slightly lower