

### **High-Resolution Foraminiferal Micropaleontology in the Oligo-Miocene of the North Alpine Foreland Basin**

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The North Alpine Foreland Basin (NAFB) comprises one of the main depositional areas of the vanished Paratethys Sea by forming a deep-water trough in front of the northward moving Alpine nappes. Its Oligocene-Early Miocene marine infill contains important source and reservoir rocks. Currently, the Rohöl-Aufsuchungs AG (RAG) is facing new ventures of oil and gas exploration in the southern NAFB. This area adjacent and below the Alps is heavily tectonised and imbricated. To assure efficient drilling, exploration will have to rely on the means of micropaleontology to unravel the relations between these highly deformed and dislocated deposits and their connection to the undisturbed northern part of the basin.

A three-year project co-funded by the RAG and the Commission for the Paleontological and Stratigraphical Research of Austria (Austrian Academy of Sciences) intends to provide a high-resolution micropaleontological analysis for three N-S-oriented wells from the late Oligocene - Early Miocene in the NAFB. The evaluation of the foraminiferal, dinoflagellate and nannoplankton assemblages will reveal crucial information on biostratigraphy, facies distribution and past productivity. The micropaleontological data will be backed up by geochemical proxies (total organic carbon, sulphur and carbonate contents), geophysical logs and seismic images.

In a first step a depositional model for the Hall Fm. (upper Aquitanian-lower Burdigalian) will be established. These widespread offshore sediments from the NAFB in Austria and Germany comprise mainly turbiditic sequences at the base which are overlain by a thick package of silts and sands. Initial foraminiferal investigations on samples from the basal Hall Fm. at the Hochburg drilling site revealed assemblages dominated by *Uvigerina* spp. passing into associations dominated by the agglutinated foraminifera *Bathysiphon* and *Cyclammina*. The overall composition indicates an upper-middle bathyal setting. High proportions of damaged and abraded *Ammonia* spp. in the respective samples document intense transport. Preliminary results for the geochemical proxies revealed rather low values of TOC (0.33-0.86%) in the lower Hall Fm. in contrast to higher TOC content in the upper Hall Fm. (1.18-1.44%). S (0.1-0.4%) and calculated carbonate content (30-50%) vary constantly throughout the formation. These and future results will contribute to an improved reconstruction of the paleoceanographic and paleogeographic setting in the NAFB.