



Stratigraphic assessment of the Santonian to Maastrichtian Postalm section (northwestern Tethyan realm, Austria)

Erik Wolfgring and Michael Wagreich

Department of Geodynamics and Sedimentology, Universität Wien, Vienna, Austria (erik.wolfgring@univie.ac.at)

The Postalm section in the Northern Calcareous Alps (Austria) covers an almost continuous succession of Santonian to Maastrichtian hemipelagic to pelagic sediments. Our detailed stratigraphic study starts with an in-depth evaluation of the *R. calcarata* total range zone. The implementation of a cyclostratigraphic model was followed by a high resolution assessment of foraminifera and nannoplankton communities of this interval (Wagreich et al., 2012). In the aim to expand the cyclostratigraphic framework for the Upper Cretaceous, a biostratigraphic sampling of the entire succession at Postalm was conducted. As cyclic sedimentation of marls and marly limestones prevails throughout the section, over 300 samples have been taken bed-by-bed.

Foraminifera data suggest the outcrop covers an interval ranging from the uppermost Santonian *Dicarinella asymetrica* to the Maastrichtian *Gansserina gansseri* Zone (nannofossil zones CC17 to CC22).

The lowermost part of the section displays a comparatively shallow shelf environment yielding high percentage of benthic foraminifera with a highly diverse community. However, we can observe a distinct deepening in the basal Campanian and towards the Maastrichtian.

Stratigraphically younger parts (i.e. Upper Campanian and Maastrichtian) of the section are displaying a deeper palaeoenvironment. In this pelagic environment foraminifera packstones with marl intercalations dominate the lithology. The state of preservation of microfossils has to be considered as moderate to poor.

Evidence for frequent turbidite events in the uppermost (Maastrichtian) part of the section was recorded. As isotope records of the previously investigated *calcarata* interval at Postalm correlate well to other Campanian sections, we are confident to find a valuable proxy in the data from other subsections of this outcrop as well.

The cyclostratigraphic evaluation of sedimentation cycles in combination with biostratigraphic data sheds light upon the duration of planktic foraminifera biozones in this section and the northwestern Tethyan Penninic realm. Furthermore, the first and last appearance dates of certain taxa can be exactly determined, thus allowing an accurate chronostratigraphic correlation with other sections. Observed long-term as well as sudden changes in foraminifera abundances or assemblage types could be influenced by orbital cyclicity and associated environmental changes.

References

Wagreich M., Hohenegger J., Neuhuber S. (2012). Nannofossil biostratigraphy, strontium and carbon isotope stratigraphy, cyclostratigraphy and an astronomically calibrated duration of the Late Campanian *Radotruncana calcarata* Zone. *Cretaceous Research*, 38: 1-17