A multistratigraphic study of the Campanian Postalm section (Northern Calcareous Alps, Austria)

Wolfgring E.*[1], Wagreich M.[1], Hohenegger J.[1], Dinarès-Turell J.[2], Spötl C.[3] & Sames B.[1]

[1] University of Vienna. [2] Istituto Nazionale di Geofisica e Vulcanologia. [3] University of Innsbruck.

Corresponding author email: erik.wolfgring@univie.ac.at

The Postalm section in the Gosau Group (Northern Calcareous Alps) exposes pelagic deposits of the northwestern Tethys. This study focuses on magneto-, biostratigraphy and cyclostratigraphy with special emphasis on the impact and rates of palaeoenvironmental changes. The section displays rhythmic deposits of Santonian to uppermost Campanian age. The Santonian/Campanian transition is characterised by condensed greyish packstones, while the younger deposits are reddish foraminiferal packstones. The latter consist of limestone-marl couplets, whereby each pair represents a precessional cycle of approximately 20 ka. A biostratigraphic framework based on planktonic foraminifera and calcareous nannofossils is supported by carbon and strontium isotope stratigraphic as well as magnetostratigraphic data. Stable isotope data from provide further means to correlate the Postalm section to Tethyan reference sections. Events such as the Late Campanian Event and the Base *Calcarata* Event were identified using $\delta^{13}C$ data. Spectral analyses of three proxies ($\delta^{13}C$, Fe content and thickness of limestone/marl couplets) identified 17 (model A) to 18 (model B) 405 ka eccentricity cycles spanning the middle to upper Campanian (*Contusotruncana plummerae* to *Gansserina gansseri* Zones or CC17/UC15 to CC23/UC16 nannofossil zones). A cyclostratigraphic model based on three proxies ($\delta^{13}C$, Fe and the variations in bed thickness of limestone/marl couplets) in combination with biostratigraphic data and ages of Chron boundaries gives insights into the duration of biozones and the timing of bioevents in the northwestern Tethys Ocean.