Geophysical Research Abstracts
Vol. 14, EGU2012-8293, 2012
EGU General Assembly 2012

Mineralogical and geochemical records of the Upper Campanian Globotruncanita calcarata Zone- implications for the Penninic Ocean.

S. Neuhuber and M Wagreich
Geodynamics and Sedimentology, University of Vienna, Austria (stephanie.neuhuber@univie.ac.at))

The correlation of time-equivalent sections is vital for interpretation of paloceanographic conditions. This presentation compares two biostratigraphically well-constrained sections of the Penninic Ocean (Alpine Tethys) concerning their sedimentology, bulk mineralogy, and stable carbon and oxygen isotope distribution. We focus on limestone-marl cycles of the Globotruncanita calcarata zone in the Austrian Alps: one section (Oberhehenfeld) was situated at the northern (European) passive margin of the Penninic Ocean in the Ultrahelvetic domain whereas the other section (Postalm) is located at the southern active margin north of the Adriatic microplate.

Bulk mineralogical results are obtained from both sections. Identified minerals are in increasing order: quartz < calcite < sheet silicates. Plagioclase is confined to some intervals. The main difference between the two sites is the presence of dolomite in the southern section. This is caused by the vicinity of the Austroalpine realm and reworking of widespread Triassic dolomite. The calcite content of the northern profile varies between 50 and 80% and is significantly lower compared to other Ultrahelvetic sections.

Recently Wagreich et al. (in revision) were able to date the duration of the Globotruncanita calcarata zone to c. 790 000 yrs. Using this date we were able to determine mean accumulation rates of carbonate associated elements at the northern section and identify intervals of high carbonate associated Cu and Zn in the upper part of the section as well as three levels of higher carbonate associated Fe and U throughout the profile.