

# **Geochemical study of Late Paleocene volcanic ash layers from the Alpine Anthering Formation, Austria**

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The Anthering Formation is part of the Rhenodanubian Flysch and consists of Late Paleocene and Early Eocene sediments. This stratigraphic section comprises marly claystone and siltstones with several intercalated bentonite layers. These altered ash layers from at least two different volcanic localities consist mainly of Fe-montmorillonite and are comparable to volcanic ash deposits of the same age from the Fur Formation of the northeastern North Atlantic. A detailed study of the iridium distribution in both the bentonitic layers and the clayey marls from the Paleocene-Eocene boundary was done using the multiparameter  $\gamma$ - $\gamma$  coincidence spectrometer at the University of Vienna, Austria. This instrument was specifically constructed for the nondestructive determination of iridium in small samples (less than 0.5 g) at the sub-ppb abundance range (detection limit about 20 ppt Ir). An additional detailed geochemical study using INAA, XRF, and stable isotope mass-spectrometry for the determination of trace element compositions and  $\delta^{18}\text{O}$  and  $\delta^{13}\text{C}$  variations was performed to investigate the geochemical character of the bentonite layers. The studied bentonites seem to have been derived from trachytic (two samples) and alkalibasaltic (all others) ashes, but not from trachyandesites or dacites. An equivalent distribution can be observed within the much thicker bentonite layers from the Early Eocene rifting of the North Atlantic.