



## **Climatic signals in the Paleocene fluvial formation of the Tresp-Graus Basin, Pyrenees, Spain.**

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Fluvial successions of the Tresp-Graus basin in the South Central Pyrenees preserve a nearly continuous record of climate evolution through the Upper Cretaceous, Paleocene and Eocene epochs. The Paleocene-Eocene Thermal Maximum has been identified thanks to stable isotope profiles in several sections and associated with a strong pulse of coarse clastics into the basin, suggesting a dramatic increase in flood power during this global warming event (Schmitz and Pujalte, 2003; Chen et al., 2018). However, much less has been done so far on the Paleocene record and in particular on the period immediately preceding the PETM. In this study, we sampled the pre-PETM interval in the Esplugafreda and Serraduy sections, at higher-resolution than previously performed. Stable isotopes, elemental analysis and clay mineralogy all document a remarkably stable climate during the Paleocene. Such very steady records put in question the presence of the large Mid-Paleocene unconformity inferred by others and which doesn't seem here to be a major feature. More importantly, we find robust evidence in the Serraduy section of the POE already identified in the Esplugafreda section (Khozyem et al., n.d.). This finding brings additional support to suggest that carbon release during the PETM may have been a feedback to warming generated by an initial release during the POE (Bowen et al., 2015).

### References

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