

Interactive comment on “Did high Neo-Tethys subduction rates contribute to early Cenozoic warming?” by G. Hoareau et al.

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This paper discusses the possible causes of the Early Eocene Climate Optimum, and shows that the closure of the Neotethys alone cannot explain the pCO₂ increase at that time. This paper is very well written, easy to read even for geologists like me that are not specialized in paleo-climatology. Definetly, this work deserves being published.

The paper recognizes huge uncertainties on many parameters that control CO₂ release by the Neotethys subduction (as large that this kind of discussion sometimes looks to me like discussions on the sex of angels). Nevertheless, G. Hoareau and coauthors show that, even considering the scenario for which the CO₂ release by the Neotethys subduction zone is the largest, it does not account for the registered pCO₂ increase. My only concern is that authors consider a 200 m sediment thickness on the

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subducting oceanic lithosphere before the onset of continental subduction. Is it really impossible that a significantly thicker sediment layer was lying on the oceanic plate close to the continental slope, e.g., because submarine fans would have developed somewhere on the Neotethys passive margin? Could this significantly increase the released amount of CO₂ or not?

Another minor comment : the last phrase of the abstract is disappointing, because it looks like there is no alternative to investigate. Authors should put in their abstract the last phrase of the paper ("decrease of net carbon burial"), because if there's no solution, nobody will likely want to read the paper.

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