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Solid Earth Discussions

Interactive comment on "Late Cretaceous to Paleogene exhumation in Central Europe – localized inversion vs. large-scale domal uplift" *by* Hilmar von Eynatten et al.

Anonymous Referee #2

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I believe that this manuscript is very timely in view of current efforts in understanding large-scale exhumation of large continental areas, particularly I the light of current discussions on dynamic topography effects. I appreciate the solid-written and argumented character of the manuscript, the documentation by detailed and state of the art thermochronology and the nice discussion on genetic mechanisms. I suggest that the manuscript can be accepted almost as is. What can be improved is a better link between the various genetic mechanisms discussed and a preferred solution. The validity of some of these mechanisms is not really fully clear in the manuscript. For instance, I would see lithospheric folding as fairly suitable mechanism providing an advanced explanation. However, the authors discard this mechanism because "a region

that was subsiding until the onset of inversion will not become uplifted but exhibit accelerated subsidence under tangential compression", which is an unclear argument. This is either not well explained or incorrect: sure that subsidence may be enhanced by lithospheric folding in basins, we see such effects in many worldwide places. In a similar way, other potential mechanisms are not fully clear in the manuscript, at least to me. Therefore, to increase the impact of the paper, I suggest to revise, explain better and be more quantitative to all mechanisms explained in Section 7. Otherwise, as said above, this is a very nice contribution that fits perfectly the scope of the journal.

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