

Solid Earth Discuss., author comment AC1
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Reply on RC1

Zbyszek Remin et al.

Author comment on "Deep vs. shallow – two contrasting theories? A tectonically activated Late Cretaceous deltaic system in the axial part of the Mid-Polish Trough: a case study from southeast Poland" by Zbyszek Remin et al., Solid Earth Discuss., <https://doi.org/10.5194/se-2021-77-AC1>, 2021

This is interesting contribution focused on detailed analysis of how active inversion tectonics might have influenced sedimentation within the SE segment of the Polish Basin, along the border of the Mid-Polish Anticlinorium. Authors used diverse set of data and multiple lines of evidences – sedimentological evidences, heavy mineral studies, geochemistry, palynology - to construct their model. As such, this manuscript seems to be very relevant to the Solid Earth Special Issue on inversion tectonics. There are however several aspects of this contribution that could be improved, and I'd like to strongly encourage the Authors to invest some extra time and effort so their paper would be substantially – in my opinion at least - improved.

Thank you!

In chapter 1 (Introduction), I'd suggest adding:

- short overview of various aspects of syn-kinematic sedimentation during basin inversion;

We are currently placing such an overview into the original manuscript; additionally, we followed more detailed recommendations given in the attached annotated pdf file.

- short description of Late Cretaceous inversion tectonics in Europe (structural style, timing);

As above, we are currently doing this. A short description will be provided in the final version of the manuscript.

- a brief summary of Late Cretaceous paleobathymetry, climate etc. – i.e. all the parameters that, apart from tectonic processes, might have also influenced depositional systems;

According to some additional comments, all these issues are provided and discussed in the final version of the manuscript.

In Chapter 2 (State of the art – a short story of the two contrasting theories) more detailed presentation of the previously formulated opinions on inversion of the Polish Basin, in particular its SE part, would be needed to provide international readership better insight into this important scientific discussion on one of the key processes that shaped present-day structure of this part of Europe.

Done. We have followed Referee's general and detailed recommendations (including those provided in the annotated pdf) and provided a more detailed discussion concerning the previous opinions on the inversion of the Polish Basin.

Chapter 6 (Interpretation and discussion) would benefit from discussion of syn-inversion sedimentation in other parts of the Polish Basin and in other parts of the Central European Basin System and its comparison to the model proposed for the Roztocze region.

Such a discussion is provided in the final version of the manuscript, and the Roztocze region has been compared to other parts of the Polish Basin as well as to the selected examples from CEBS. Thank you for the very useful comments on the annotated pdf file.

Other, much more detailed recommendations regarding text (both its structure as well as content) and figures are given in the attached annotated pdf file.

Thank you for the annotated pdf file – it was very useful while preparing the final version of the manuscript.