

Solid Earth Discuss., referee comment RC1  
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## Comment on se-2021-77

Anonymous Referee #1

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Referee 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 SE Poland" by Zbyszek Remin et al., Solid Earth Discuss.,  
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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.

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

- short overview of various aspects of syn-kinematic sedimentation during basin inversion
- short description of Late Cretaceous inversion tectonics in Europe (structural style, timing)
- 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

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.

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.

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

Please also note the supplement to this comment:

<https://se.copernicus.org/preprints/se-2021-77/se-2021-77-RC1-supplement.pdf>