

Interactive comment on “Emplacement of “exotic” Zechstein slivers along the inverted Sontra Graben (northern Hessen, Germany): clues from balanced crosssections and geometrical forward modelling” by Jakob Bolz and Jonas Kley

Anonymous Referee #4

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Dear author and editor

I have reviewed the manuscript: Emplacement of “exotic“ Zechstein slivers along the inverted Sontra Graben (northern Hessen, Germany): clues from balanced crosssections and geometrical forward modelling by Jakob Bolz and Jonas Kley.

First I would like to emphasize that the topic is highly interesting and relevant (it is always interesting to solve old riddles) and the manuscript is of a proper length.

The manuscript suffers, however, under a number of major structural flaws, mixing

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of geological setting, methodology, results and appears somehow unfinished. The structure of the paper makes that it sometimes is hard to see what is observations (geological mapping) and what is results of a modelling, and it is extremely important to distinguish between these since modelling results are always only one of many possible results, and that problem is not addressed at all. What if other assumptions were made about the fault geometry?

It is also unclear why the segmentation of the graben is important in the present context. Does the segmentation control the distribution of the exotic slivers and if so, why are there no slivers in segment III?

The manuscript does not include the large number of papers addressing the interaction between salt (weak layers) and extension-inversion which are based on seismic interpretations. They need to be addressed in the discussion.

The figures are poorly referenced and need an overhaul. Lots of the localities and areas mentioned in the text are not to be found on figures. The figures are not mentioned continuously with increasing numbers etc. Please make the figures more readable and a consistent layout. The figure captions are poor. Should explain the figures better.

Attached is an annotated pdf of the manuscript with a large number of comments. I would recommend that a native English person takes the responsibility to correct the English (which I find fine)

Please also note the supplement to this comment:

<https://se.copernicus.org/preprints/se-2020-133/se-2020-133-RC4-supplement.pdf>

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2020-133>, 2020.

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