



EGUsphere, referee comment RC2
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Comment on egusphere-2022-1183

Tim Dooley (Referee)

Referee comment on "Structural control of inherited salt structures during inversion of a domino basement-fault system from an analogue modelling approach" by Oriol Ferrer et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-1183-RC2>, 2023

Ferrer et al. present a nice modeling study on inversion of a domino-style rift system with prekinematic layers of "salt" embedded within the this sequence. Model salt thickness is varied, as is the suprasalt overburden thickness, in order to better understand the impact of such a weak layer on deformation styles during extension and inversion. A just-published paper by the same lead author focuses solely on extension of a domino-style system with more variety in terms of number of weak layers etc. The authors do refer to this paper and acknowledge that there is some overlap. I don't believe this overlap is problematic at all. This paper is aimed at inversion, and destined for a special issue on inversion.

I like the models presented in this paper and I do think this study should be published after moderate revisions. I have heavily annotated two attached PDFs and would like the authors to revise the manuscript accordingly. My main concerns as it stands right now are:

1. The Introduction is quite poor and some simple revisions should help better frame the study as well as stating what the research questions are. Doing this would also set up the Discussion to answer the questions posed in the Introduction.
2. In the model description section some of the text concerning the extensional stages of deformation are either not illustrated in any way and are possibly redundant. A better way to describe the models might be to focus on one in both extension and inversion, and then focus on the differences shown by the other models in the series.
3. The discussion needs work in terms of how it flows and for clarity. Answering questions posed in the Introduction might be the way forward here. See comments on the manuscript. Some issues with terminology here too. Mixtures of impingement and welding

can be a struggle. And then effective weld versus full weld – see comments. There is also a lack of comparison of structural styles seen in these models and those from older studies and lack of citing in this section.

4. The figures are all of good quality and necessary but some additional information on some of these figures is needed – keys to fault colors, annotations etc.

5. Just a general need to tighten the text for clarity etc. See comments.

I hope these comments help to improve the manuscript.

Please also note the supplement to this comment:

<https://egusphere.copernicus.org/preprints/2022/egusphere-2022-1183/egusphere-2022-1183-RC2-supplement.pdf>