

Dear Peter Sandersen,

Thanks again for taking your time to review our manuscript. We are very happy about your positive assessment of our revised work.

R: Line 133-1134: I relation to possible deeper tectonic movements, the authors write: 'Therefore, approaches that take into account both the geomorphology and the deeper subsurface are necessary'. I agree on this, but the deep subsurface part is not included in the modelling. Please consider a short remark on this.

A: Thank you for this suggestion. We feel that a remark on our models would not fit to the "study area" section, which you refer to. Thus, we added the following sentence to section 3.2 Model design (l. 170 f.):

"Deeper subsurface features beneath the salt structures were not included in the models."

R: Line 315: Consider moving this interpretation to the discussion.

A: OK, I deleted the statement from the text, as there is no suitable connection point in the discussion.

R: Line 354: '...highlighting the significance of the geometry of the load': Consider moving this interpretation to the discussion.

A: Thank you, I deleted this statement. This finding already has a lot of room in the discussion and doesn't need to be mentioned in the results.

R: Line 409: Consider using 'previously' instead of 'initially'.

A: Done, changed it to "previously".

R: Line 474: I am unsure what is meant with 'the very different body forces'. Consider clarifying.

A: We tried to clarify this by inserting short explanations (green) to the sentence in question:

"This is most likely an effect of the very different body forces involved, which were high **due to the high applied load** during the load stage and low (**only gravity and sedimentary overburden**) during the unloading stage."

R: Lines 473-480: Just a comment: When the salt movements create structurally damaging deformations of the sediments above, especially when extrusion occurs, I would not expect the system to fully return to the pre-loading situation. Please consider if this irreversibility to a certain degree could explain why the vertical displacement is higher during the loading compared to the unloading.

A: Thank you for your thoughts! Yes, the influence of structural deformations on the salt flow during the unload stage is another very interesting aspect of the system. We will continue to take this into account in future studies.

Kind regards,

Jacob Hardt