Review (2nd round) of "Analogue experiments on releasing and restraining bends and their application to the study of the Barents Shear Margin"

Comments on the revised manuscript:

Firstly, I congratulate the authors on a successful modeling study. The experiments performed were rigorous, and the results are highly insightful and information dense. I think that this is an important contribution to our understanding of the Barents Shear Margin and complex shear margins in general. Though the authors revisions mostly satisfied my initial comments, I suggest additional revisions be made:

Main comments:

Aside from lingering grammatical flaws (see comments below), the description of the experiments including methodology and results is satisfactory after the initial round of revisions. However, I suggest that the discussion is slightly revised both in terms of structure and content.

As it is, the discussion seems to address segment 1 in the experiment and its relationship with the Barents Shear Margin, then moves into a larger discussion around segment 2. Then there is the final paragraph of the discussion, which is overall unclear. Logically, segment 3 would be discussed here, yet there is potentially a typo that makes the entire paragraph confusing. Though not highly essential, I recommend the use of subheadings to improve the clarity of the discussion.

In terms of the content of the discussion, I find it to be largely descriptive and could be improved by discussing the more general implications of the observations within the scope of the questions addressed (timing of structural development, types of structures observed, sedimentary basin evolution). This could be done with a separate discussion (perhaps just a final paragraph) on the more general process of multiphase deformation in a complex shear margin. What are the major takeaways from the experiments that might be more ubiquitous, globally? How does this fit in the current literature of mixed-mode, multiphase deformation, and its structural and bathymetric expression? How is strain redistributed in the next phase of deformation - what is the role of pre-existing structures, lithological complexity, etc.? In some instances, the authors do this, for example discussing the role of mechanical stratigraphy on fold configurations (line 880). However, these experiments are extremely information dense, and more insights can be extracted from the results. Without something to this effect, I feel the impact of the article is limited to the scope of the Barents Margin.

Lastly, the conclusion could be improved by mentioning the outlook of the experiments. Some examples may be: what remains unresolved? what can be done next to understand margin and process? what techniques could be used to address these things?

Grammar: Though the authors mentioned they addressed this issue, the grammar throughout the manuscript is still very unpolished and, in many cases, detracts from the reader ability to understand what is written. Some examples (of many) are listed below:

- Lines: 1, 181-183; 236 – 237; 730 – 732; 739 – 741, 759, 578, 658 – 659, 838-842, 868, 1004, and several others).

Figures: The figures have been greatly improved since the initial submission; however I suggest some additional changes:

- **Figures 5 and 6:** segment labels be included on the side of panel A.
- **Figure 7:** a simple schematic could be added to show the location of segments as in Figure 4. Though Figure 4 contains all the required information, these changes (with additions to Figs. 5&6 mentioned above) would save the reader from continuously going back and forth throughout the paper.
- **Figure 9:** Though the meaning is somewhat obvious, the standalone letter "P" should be defined in the figure caption.
- **Figure caption 11:** The word "note" starts three sentences. For flow, it is a good idea to vary the sentence structure. Each panel (A-I) should be defined in the figure caption or combined into a single element.
- **Figure 12:** Panels A, B, and C (and elements of each panel) are not explained. Only panel A is referenced in-text.

Textual comments:

Lines 838 – 842: The meaning of this sentence is unclear. Do the authors mean that: In the margin underlain by continental crust, it is unlikely that enough opening occurred to link the basins?

Line 856: This the only location where Figure 12A is explained. Figure 12B,C is never referenced separately in the text.

Lines 925 – 926: How did sedimentary communication occur without basin linkage? It may be helpful if some processes were presented to explain this.

Lines 999-1000: This sentence is unclear. Do the authors mean a hybrid between segments 2 & 3? Or that segment 3 is a hybrid between segments 1 & 2. If not, how can a segment be a hybrid between itself and another segment?