Public justification (visible to the public if the article is accepted and published):

Dear colleagues,

Thank you for your revised version addressing Guillaume and Chris' comments. Your paper offers a rare combination of analog and numerical experiments on the important process of ongoing stress perturbation in the context of continent rifting. I am confident your paper will be of great interest to our readership.

Before publication, there is however a small issue that needs some consideration. At line 141 you mention that the basal condition delivers a symmetric strain gradient. There is certainly a velocity gradient, however, I wonder if there is a horizontal strain gradient at all. All the foam bars record the same finite strain. Hence, for each bar, dl/lo is the same everywhere at the base of the model, with no strain gradient. If I am correct, I suggest removing at line 141 the reference to strain gradient.

Kind regards,
Patrice

Dear Patrice,

Thank you for your thorough review and helpful suggestions.

Regarding the extension gradient, you are right that our used terminology was unfortunate. We have changed it to “velocity gradient” rather than removing this sentence, since we believe that this is an important aspect of our analog model setup with respect to how we implemented extension velocities in our numerical models. We have changed line 141 as well as the related label in Fig. 2.

Other minor issues:

line 23: Linear or planar?
Linear seems appropriate in our opinion.

line 72: coma after "faults"
That’s changed, thank you.

line 78: remove "with time"
That’s changed, thank you.

line 90-91: remove "inferred" and change "regionally" by "regional",
That’s changed, thank you.

line 106-108: Need some cut and paste: "Such stress deflection due to the vicinity of pre-existing faults have been reported..""
That’s changed, thank you.

line 109-110: remove "occurring in continental rifts in 3D"
That’s changed, thank you.

line 128: remove "subsequent"
That’s changed, thank you.

Line 244: Remove the repetition with line 228-229.
That’s changed, thank you.

Line 488: In figure 8, if possible, could you tune down the opacity of the non-defined faulting, or even consider removing it completely? I don't get the strain rate shading. There is a scale covering 1e-19 to 1e-13 per sec with four shading levels, however, there is only one single shading level on the figure (covering 1e-16 to 1e-15 per sec). The topography is very hard to see as well.
We agree, that the colour shading for the strain rate was not well chosen. We have adjusted the strain rate colouring such that the distinction between the steps is clearer. For all strain rates < 1e-16 1/s, values are completely transparent. Also, we removed non-defined S_{Hmax} orientations by setting the opacity = 0. Figure 8 is now easier to read and we applied the same changes to the pertinent supplementary Figures.

Line 503: Coma after "Hereafter".
That’s changed, thank you.

Line 756: "palaeo-movements" is a bit vague here. I suggest: "... to infer changes in plate-motion,..."
That’s changed, thank you.