

Solid Earth Discuss., referee comment RC1
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Comment on se-2020-209

Anonymous Referee #1

Referee comment on "Crustal structure of the East African Limpopo margin, a strike-slip rifted corridor along the continental Mozambique Coastal Plain and North Natal Valley" by Mikael Evain et al., Solid Earth Discuss., <https://doi.org/10.5194/se-2020-209-RC1>, 2021

This manuscript presents new images of the crust and uppermost mantle along a profile offshore the Mozambique Coastal Plain. The authors analyze multichannel and wide-angle seismic data using mature software (CGG-Veritas Geocluster and RAYINVR). The P-wave tomography results show a thinned crust in the northeastern end of the Limpopo margin, in contrast to the 34-km-thick crust in the southwestern part of the Limpopo margin and the North Natal Valley. The authors calibrate their tectonostratigraphic analysis with industrial well logs, and suggest a strike-slip rifting process around 155 Ma ago that separated Antarctica and Africa plates.

I cannot make comments on data analysis as that is beyond my specialty. Although the discussions are thorough, I still find it hard to follow as a reader who is not familiar with this region. Low-quality figures prevent me from evaluating the results in depth. Here are some suggestions on presenting.

- The abstract is too long. It is challenging to get the take-away message from the abstract.
- The font sizes in almost all figures are too small, making it difficult to evaluate the results and understand the discussions.
- It would be better to show a large-scale tectonic map or plate reconstruction map as the first figure to explain the East-Gondwana break-up discussed in the introduction section.
- I understand Fig. 8 is the primary product of data analysis. How is it related to the following discussions? It would be helpful to label certain features on top of the tomography image.
- All geographic features mentioned in this paper need to be labeled in Fig. 1.