

## ***Interactive comment on “Kinematics and extent of the Piemont-Liguria Basin – implications for subduction processes in the Alps” by Eline Le Breton et al.***

**Eline Le Breton et al.**

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Response to Review #1 by D. J. J. van Hinsbergen

We thank Douwe J.J. van Hinsbergen for his review, which highlights the active debate on this topic, especially for the motion of Iberia. Their reconstruction published in 2020 is an amazing compilation of geological and kinematical data for the entire Mediterranean realm. It is not our aim to propose such a reconstruction again. Our aim is to study the detailed kinematics of opening of the Piemont-Liguria Ocean and to quantify precisely the former extent of the PL Ocean and its rifted margins between Europe and Northern Adria. We however disagree with their model for the motion of Iberia

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and Sardinia as it implies more than 500 km of convergence between Iberia and Sardinia. Instead, we present here an alternative scenario and show that this scenario is in good agreement with records of rifting and subduction in the Alps and that it is thermomechanically viable. We do believe that our work provides new quantitative estimates and alternative view that are useful for the scientific debate to better understand the geodynamic evolution of this area.

Please find attached a detailed response to all comments.

Sincerely

Eline Le Breton, on behalf of all co-authors

Please also note the supplement to this comment:

<https://se.copernicus.org/preprints/se-2020-161/se-2020-161-AC2-supplement.pdf>

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Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2020-161>, 2020.

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