

## ***Interactive comment on “Fault slip envelope: A new parametric investigation tool for fault slip based on geomechanics and 3D fault geometry” by Roger Soliva et al.***

### **Anonymous Referee #1**

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The paper “Fault slip envelope: A new parametric investigation tool for fault slip based on geomechanics and 3D fault geometry” by Roger Soliva, Frantz Maerten, Laurent Maerten and Jussi Mattila, deals with the reactivation of complex fault systems as a function of a wide range of possible geological conditions and mechanical properties.

This topic is very interesting and the results potentially very useful for the scientific community, however most of the results (figures) are not well explained and some improvements are needed to make the paper more clear. The structure of the paper is sometimes circular, and figures are recalled several times along the text making the reading not easy.

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My concerns regard two main aspects:

Definition of the method. Method and presents results are often defined very briefly. As examples: Figure 5 is explained in 1 line (line 252), while the reasons why the authors chose the parameters (stars) of Figs 4 and 7 are not or very briefly explained along the text.

General clarity of the figures. Most of the figures are not clear and absolutely not well explained along the text. For example, colours in figs 3 a, b and C have apparently no meanings, Figure 6 B is never mentioned along the text, and Fig 7 has too many different scales to be easily readable.

My general feeling is that the figures show much more respect to what is explained along the text. I strongly suggest clarifying this point by better matching what is shown in the figures and what is written along the text. This can be reached by both simplifying the figures and improve the explanations along the text depending on what the authors want to highlight more.

Punctual comments: See the annotated pdf file.

Hope this helps

Please also note the supplement to this comment:

<https://www.solid-earth-discuss.net/se-2019-61/se-2019-61-RC1-supplement.pdf>

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2019-61>, 2019.

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