

EGUSPHERE-2023-359

The manuscript covers an interesting topic, already discussed in literature, providing improvements on previous works.

The manuscript is well-written and provides a good description of the existing literature used as a starting point.

The methodology adopted is clearly explained and the choices performed in defining the parameters used during the analysis are well-motivated.

The results are clearly discussed and well summarized (Table 2 is a nice addition to the manuscript).

A few minor details should be fixed before publication:

- In section 3.3 the notation $U(\dots, \dots)$ is used to define a uniform distribution between two values without being properly introduced. Also, the same notation should be used in section 3.1 when discussing the PDF of the seismogenic down-dip extent for consistency.
- At the end of section 4 the sentence "While other trends are expected between parameters, they seem less visible, likely due to the uncertainties of the parameters explored." is ambiguous as it is not clear if the dependencies among these parameters have been studied or not. If the high uncertainty of these parameters is the motivation not to pursue further analyses it should be stated more clearly.
- Not all figures presenting multiple panels are labelled: I suggest adding a label to each subfigure and properly referencing it in the caption.