

In this file, there are responses to the Reviewer#3 (Giacomo Medici, community comment).

We thank the Reviewer#3 for additional efforts and comments leading to improvement of figures.

Responses to the Reviewer#3 (Community comment, Giacomo Medici)

1.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
General comments Very good geo-modelling research with a focus on representation of fault geometries. Please, follow my specific comments to improve the manuscript.	Thank you for your assessment.	Not applicable.

2.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
Specific comments Line 16. "Geometrical" better than "directional" for an abstract.	Agree	Done.

3.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
Line 32. Add other applications in the growing fields of geo-sciences of CO ₂ storage and geothermal energy. Please, insert the following references	Agree/Clarification We believe that the paper (doi: 10.3389/feart.2023.1328397) is relevant because, as a review article, it summarizes	We've added new citations in relation to geothermal energy and CO ₂ storage.

<p>for the importance of faults in these two geo-energy fields:</p> <p>Geothermal energy: Medici, G., Ling, F., Shang, J. 2023. Review of discrete fracture network characterization for geothermal energy extraction. <i>Frontiers in Earth Science</i>, 11, 1328397.</p> <p>CO2 storage: Nicol, A., Seebeck, H., Field, B., McNamara, D., Childs, C., Craig, J., Rolland, A. 2017. Fault permeability and CO2 storage. <i>Energy Procedia</i>, 114, 3229-3236.</p>	<p>experimental techniques to characterize geometrical properties of subsurface aquifers which is relevant for geothermal applications. However, we would also need to cite at least one original article (https://doi.org/10.1016/j.geothermics.2022.102523).</p> <p>Regarding the second paper (doi: 10.1016/j.egypro.2017.03.1454), we believe that it is a conference paper or an extended abstract. Therefore, we decided to cite a full original paper instead (https://doi.org/10.1016/j.ijggc.2019.06.013).</p>	
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4.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
<p>Line 50. Clearly state the 3 to 4 specific objectives of your geo-modelling research by using numbers (e.g., i, ii, and iii).</p>	<p>Agree/Clarification</p> <p>Honestly, we have rather two main objectives: analyzing case studies for data with and without uncertainties. Of course, we could add a third bullet point with the analysis of GEBCO data, but this is rather a discussion of implications of the previous analyses.</p>	<p>We've highlighted two bullet points.</p>

5.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
Page 6. I can see several equations without numbers associated with.	Clarification Some minor formulas don't have numbers. If the Editor will require additional numbers, we will introduce them.	None, as of now, but can be added upon the Editor's request..

6.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
Lines 281-294. This part of the discussion shows paucity of literature. I suggest to back-up your statements with supporting literature.	Agree	We've added three references to the section 5.1: two textbooks as a support for general definitions and one historical paper.

7.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
Line 362. Add a "take home message" for the researchers working in the field.	Clarification We are not sure which field is the Reviewer referring to (structural geologists, bathymetric geomorphologists). The conclusions can be mostly useful for researchers working explicitly with triangulated surfaces or implicitly: in the form of performing directional analyses of surfaces (azimuth,	We've added a general statement before the bullet points. We've improved the first bullet point of the Conclusion because it was not very clear.

	maps) that use triangulations under the hood.	
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8.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
<p>Figures and tables</p> <p>Figure 3. You can make the four diagrams closer, gain space and enlarge the overall image. The four blocks are difficult to analyse.</p>	<p>Agree</p>	<p>We've reduced the space between four diagrams and enlarged the image.</p> <p>Moreover, we've made the background less dark according to the request of the Editorial support.</p>

9.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
<p>Figure 4c. This is a conceptually different image. It should represent a separate Figure 5.</p>	<p>Clarification/Disagree</p> <p>Although Figure 4c might appear conceptually different at first glance, it is intentionally placed as part of Figure 4 because it directly corresponds to the triangle orientations shown above. Separating it into a new figure would break this link and make it harder for the reader to associate the triangle geometry with the resulting directional patterns.</p>	<p>None.</p>

10.

Suggestion, Question,	Author's Response	Change in the Manuscript
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or Comment from the Reviewer#3 (community comment)		
Figure 6c and d. Same issue here. These are very different images. They should represent a separate figure.	<p>Clarification</p> <p>See our response to comment #9.</p> <p>However, we realize that the caption did not include all information to see the correspondence.</p>	We've improved the caption to Fig. 6 to show the direct correspondence.

11.

Suggestion, Question, or Comment from the Reviewer#3 (community comment)	Author's Response	Change in the Manuscript
Figure 7c. Improve the graphical resolution of the Figure 7c which is a stereonet.	Agree	Done.

Other changes:

We had a bug in the code in relation to the sample circular dispersion (there was m_2^2 but it should be just m_2). The code and the tabulated results have been revised accordingly.

According to the request of the Editorial support (Mrs Daria Karpachova), we've made the background of selected figures (1, 3, 4 and 5) less dark.