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Discussions

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# *Interactive comment on* "The seismogenic fault system of the 2017 $M_w$ 7.3 Iran-Iraq earthquake: constraints from surface and subsurface data, cross-section balancing and restoration" *by* Stefano Tavani et al.

**Anonymous Referee #1**

Evaluation :

1. Does the paper address relevant scientific questions within the scope of SE? YES 2. Does the paper present novel concepts, ideas, tools, or data? YES 3. Are substantial conclusions reached? YES 4. Are the scientific methods and assumptions valid and clearly outlined? YES 5. Are the results sufficient to support the interpretations and conclusions? YES 6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? N/A 7. Do the authors give proper credit to related work and clearly indicate

their own new/original contribution? YES 8. Does the title clearly reflect the contents of the paper? YES 9. Does the abstract provide a concise and complete summary? YES 10. Is the overall presentation well structured and clear? YES 11. Is the language fluent and precise? YES. Some mistakes to be fixed 12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? N/A 13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? NO 14. Are the number and quality of references appropriate? YES. One reference to be added for fair acknowledment of previous work 15. Is the amount and quality of supplementary material appropriate? N/A

Formal review :

This is the second time I act as reviewer for this ms by Tavani et al. that reports what is to me a timely structural analysis of the fault system that is likely the locus of the 2017 Mw 7.3 Iran-Iraq earthquake. The manuscript is well written and nicely illustrated and to me it provides useful insights into the characterization of the fault that presumably ruptured during the earthquake. Most of the many comments I made in my former review have been included in this new version that, I find, has significantly improved.

I therefore recommend acceptance after some minor revision (see below).

-Plot the striation corresponding to the co-seismic slip line deduced from the focal mechanism on the stereoplot of Fig.1

-Add orientation of the section on Figure 6

-P8 L14, P12 L18, P13 L2 : change whose (for person) into which (for object)

- P14 L6-7 : it would be fair to acknowledge, hence to cite here the paper by Lacombe and Mouthereau Tectonics, 2002 entitled : Basement-involved shortening and deep detachment tectonics in forelands of orogens and which therefore fully meets the topic of crustal decollement in deformed forelands.

-P15 L10 : SW instead of SE ?

-P15-16 : The age of the inherited normal faults is now discussed in more detail than in the previous version, but still fails to explain thickness variation of pre-Permian Pale-ozoic strata.

P16 L8 : I would change into 'includes a likely mid-crustal decollement'

C3