

Interactive comment on “Geologic characterization of nonconformities using outcrop and whole-rock core analogues: hydrologic implications for injection-induced seismicity” by Elizabeth S. Petrie et al.

Roger Soliva (Editor)

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Received and published: 22 June 2020

Dear Authors,

Thank you for the work and efforts made to revise the manuscript, which is now well improved, especially with the structure of the manuscript and the geological settings. Based on your reply, I now have more recommendations about the deformation structures and method for the models you present, that need to be addressed before the manuscript can be considered for publication.

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1 - You mention that you have improved the description and labelling of the structures observed in the study sites (faults, veins etc...) but you did not clearly mention how and where you did these improvements. Please provide the tracking of these specific changes made and try to improve as much as possible these descriptions. You use the terms faults, fractures and veins, without clear definition of these terms (what you consider a fracture to be compared to a vein and a fault) but also the failure modes (slip, opening, hybrid...) you consider each time you describe them (if not clear, mention it). You add a new table with a synthesis of the structures you observed in the field, which could be useful to refer to in the results section (not only in the discussion).

2 - In your new method section, please provide explanations about the physics of the model used in Figure 12 (laws used for fluid transfer and pore pressure calculation) and the numerical method (finite element ?). Also add some references to other works using this model or at least this type of model exposing the full explanations.

Figure 6: Please, add the unit used for K in the caption text.

Photographs in general are very small, and particularly in Figure 6 and some images in Figure 8. It is then very difficult to see what you show.

I look forward receiving these revisions.

Best regards, Roger Soliva

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2020-20>, 2020.

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