Solid Earth Discussions

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Comment on se-2021-4

Zeynal Abiddin Erguler (Referee)

Referee comment on "Mechanical and hydraulic properties of the excavation damaged zone (EDZ) in the Opalinus Clay of the Mont Terri rock laboratory, Switzerland" by Sina Hale et al., Solid Earth Discuss., https://doi.org/10.5194/se-2021-4-RC1, 2021

Dear Authors,

Please be informed that I read carefully your manuscript. I would like to say that the content and outputs of your research are very important for scientists investigating fracture closure and self-sealing of mudrocks. I have only below given minor comments on your manuscripts:

- Lines 16 and 403: The needle penetrometer cannot be used for geophysical characterization of rock materials. Only mechanical properties can be predicted by this index test. I suggest authors do not trust too much on predicted geophysical values and so the related empirical approaches of previous studies. Actually, you do not need these predicted parameters for this manuscript. Please apply proper modification
- The introduction part is very long and so it is very hard to see the main motivations of this study. This part should be shortened. Since there are many previous studies on physical and hydro-mechanical properties of Opalinus Clay, the contribution of this study should be more strong to convince readers to read the entire paper.
- Some of relationships given in Figure 6 (Fig 6c,d, f, g, h, and i) are not statistically significant. I recommend removing them.
- The manuscript looks very long. It would be a little difficult to read without getting bored for those who do not work on this subject. Please shorten your manuscript by removing unnecessary evaluations, discussion and outputs of previous studies.

Except for the discussion on predicted P-wave and S-wave velocities, the content of this manuscript looks interesting. So I recommend minor revision for this submission.

Regards

Zeynal