

Solid Earth Discuss., community comment CC2
<https://doi.org/10.5194/se-2021-100-CC2>, 2021
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Reply on AC1

Bill Lanyon

Community comment on "De-risking the energy transition by quantifying the uncertainties in fault stability" by David Healy and Stephen Paul Hicks, Solid Earth Discuss., <https://doi.org/10.5194/se-2021-100-CC2>, 2021

Hi David

Thanks for teh quick reply. I agree that it's potentially useful to keep cohesion in the formulation but using the intact rock values is just going to significantly overestimate the fault plane strength at low normal stress. I don't think much data has been released from the UD deep borehole yet, but for mechanical properties there's only side-wall core and chippings both of which might be quite limited in providing frictional properties for fault planes at seismic scales. The image logs probably give some guide as to the structure.

So while it's nice to get more data there will still be a lot of expert judgment on fault-plane frictional properties that go into a pfs model and "caution" is probably going to lead to using zero cohesion in many cases.

Bill