

Interactive comment on “Control of pre-existing fabric in fracture formation, reactivation and vein emplacement under variable fluid pressure conditions: An example from Archean Greenstone belt, India” by Sreyashi Bhowmick and Tridib Kumar Mondal

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Dear Author,

Thank you for the corrections and justifications made which improve the quality of the manuscript.

I still have a significant issue with the value of tensile strength you propose. Tensile

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means negative by definition in the geological terminology (which is opposite to the mechanical convention). Then your value should be negative (e.g. -14 MPa for basalts in Schultz 1995, Rock Mechanics and Rock Engineering), since you consider the compressive stresses as positive. So why do you have a positive value for T (12 MPa) ? Please, also consider that the compressive stress applied in BTS is necessarily positive since the tests are compressional (these are not extensional experiments), then check if the confusion comes from this. Otherwise you have to consider the value derived from the BTS to be negative in the geological convention and to integrate this negative value in your σ_3 interpretation. Please provide clarifications, clear explanation for this and the relevant revisions in the manuscript.

A last minor point : I understand that the fractures you draw in the last figure are not wing cracks, thank you for the clarification. However the geometry you draw is very similar (systematic, not random) and then it will appear as counter intuitive with respect to the sense of slip for any structural geologists reading this figure. Then the geometry drawn is kind of clumsy and one can wonder if it really reflects field observations. Then my question is: do the field observations reveal this counter intuitive geometry or a more random one ? If they are more random, I would recommend to be more respectful of this in the figure.

Best regards, Roger Soliva

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2020-30>, 2020.

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