

Interactive comment on “An automated fracture trace detection technique using the complex shearlet transform” by Rahul Prabhakaran et al.

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This paper presents a novel approach to provide accurate, exhaustive, realistic fracture patterns for performing DFN, which is valuable for using it in a variety of tectonic and lithologic settings. The paper is properly written and illustrated; the method is delivered in appendix. The manuscript is acceptable for publication with very few complements which are (1) noted along the text and (2) listed below. J.Lamarche Introduction The amount of literature on the topic is growing too fast at the moment. You cannot cite all of them, so please add “e.g.” in your text. 4.1.2 Automated detection artificially fragments the large fractures, what are the methods, limitations, threshold values to prolongate traces and form large fractures? 4.1.3 Would be nice to have a better constrained comparison of automated versus visual extraction of fractures from French example.

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In addition to the P21, could you provide data like strike (rose diagram or histograms), length (histogram), number of fractures. . . that will help understanding the nature of the difference between both visual and automated surveys. Would be nice to have them for all of the 3 field examples. Having a priori ideas on fractures while visually interpreting images is not a bad thing. Indeed, the geologist is aware of the brittle processes and their limitations on the fracture geometries. This, to my opinion, is precious for visual “human-hand” fracture tracing. 4.3: No difference is made between geological features such as fractures, bedding, other, when automated tracking is performed. So, the need to impose a priori structures or preferred fracture trends is important upstream and worth in order to avoid interpreting excessive or ghost fractures. 5. Still the edges are detected when sharp on the topography. This is the condition for exhaustive tracking and possible comparison between world-wide remote outcrops. Peculiarly, in carbonates long-lasting aerial exposure alters the colors, softens the fracture crests and smooth the reliefs. This is sometimes -but not always- related to karst genesis. A discussion on the limitations bias resulting from exposure conditions could be welcome. FIGURES & CAPTIONS Fig. 11: indicate which one, between left and right, is manual and automated -

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