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Interactive comment on "A review and evaluation of the methodology for digitising 2D fracture networks and topographic lineaments in GIS" *by* Romesh Palamakumbura et al.

Anonymous Referee #2

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Palamakumbura et alii present a method for obtaining 2D accurate quantitative fracture data from photographs of outcrops. My main concerns are about: (1) novelty and (2) true usefulness of the method.

(1) Novelty: During the last ten years at least, a wealth of methods for digital acquisition of outcrops and related data processing has been proposed in the (structural) geological literature. I refer, for instance, to the following articles (and references therein): Bisdom et al., 2017, doi: 10.1016/j.cageo.2017.02.019 Tavani et al., 2016, doi: 10.1016/j.jsg.2016.03.009 Gao et al., 2017, doi: 10.1038/s41598-017-08119-2 Corradetti et al., 2018, doi: 10.1016/j.jsg.2017.09.009 Triantafyllou et al., 2019, doi:

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10.1016/j.jsg.2019.01.001 Menegoni et al., 2019, doi: 10.1016/j.enggeo.2019.02.028 Wüstefeld et al., 2018, doi: 10.1306/04251817103 Tavani et al., 2019, doi: 10.1130/GES02167.1 Bruna et al., 2019, doi: 10.5194/se-10-537-2019 I understand that Palamakumbura et alii propose a 2D method and most of the above-cited articles deal with 3D methods, but all this recent work cannot be ignored. Palamakumbura et alii title their manuscript "Review and evaluation of the methodology for digitising 2D . . ." but I see that the review section is very brief. To emphasize the novelty of results by Palamakumbura et alii, I suggest them to write a section titled "Method Background" where an accurate review of many recent papers on the same or similar theme should be addressed. Then, the novelty of the present work with comparison with previous recent papers (reviewed in the "Method Background" section) should be discussed and emphasized in the Discussion and Conclusions sections.

(2) Usefulness: Palamakumbura et alii propose a series of case studies that are very important to assess and understand the usefulness of their method. However, I am not convinced that this 2D method will be truly useful for the geologist community. To convince the SE audience about the true usefulness of the method, I suggest Palamakumbura et alii to write a new section titled "Review of previous case studies" where they review 5-10 previously-published different cases where the 2D (analogue) acquisition of fractures and faults (and related relationships, density . . .) was fundamental for scientific issues. Moreover, I suggest Palamakumbura et alii to emphasize in this new section how their new method of acquisition may have been useful to speed up and improve these previous cases. Obviously, also in this case, these concepts should be reconsidered in the Discussion and Conclusions section. In my opinion, this suggestion is consistent with part of the aim of this work. I refer, in particular, to the review aim quoted in the title.

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