

## ***Interactive comment on “A new methodology to train fracture network simulation using Multiple Point Statistic” by Pierre-Olivier Bruna et al.***

### **Anonymous Referee #1**

Received and published: 22 October 2018

The ms. by Bruna et al presents an interesting method for characterizing fracture patterns in outcrops, which involves the Multiple Point Statistics. The topic is of interest for the audience of Solid Earth, however, I had some difficulties in following many parts of the text. A robust (or at least higher than mine) background in statistics is required to fully appreciate this work. I think that, as it stands, this ms. is designed for a journal like GMD rather than for Solid Earth. I suggest either to move to another journal or to expand and explain in more detail the multiple point statistics and the training images methods.

Specific comments:

Lines 22-330. Remove from the abstract, this is material for the intro.

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Line 30. Avoid citations in the Abstract.

Line 34. The abstract should be self supporting. Define training images

Line 35. Which process?

Line 38. Same basic concepts of statistic should be expanded.

Line 58. determined (instead of inherited).

Line 97. Explain why fracture connectivity are poorly constrained in these representations

Section II.1 (The direct sampling methods). This section is extremely difficult to follow  
line 144. grid in the X&Y axis; what a node does represent?

Line 166. check "Reference"

Section II.3; sub-sub-section "Training images": this text requires a figure. It is hard to follow it.

Line 199. This does not make sense. How can an image represent a phenomenon? it is a sketch?

Line 295. How?

Line 312. I suppose that EZ are determined according to their fracture pattern

Section IV.2. Is this section really necessary for this work?

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Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2018-106>, 2018.

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