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Geoscientific Instrumentation Methods and Data Systems Discussions

Interactive comment on "Geological Stratigraphy and Spatial Distribution of Microfractures over Costa Rica Convergent Margin, Central America – A Wavelet-Fractal Analysis" *by* Upendra K. Singh et al.

Anonymous Referee #1

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1. Log data is physical measurement based on physical principals which translates log values into direct physical properties of the earth (rocks under observation), for instance Gamma ray log tells about the presence of sand, shale, or any other radioactive element if processed for U, Th logs. How does wavelet transform enhances this understanding about the lithology is not at all clear from the paper. Note that in the logs it is rather easy to identify spikes and other bad log values in combination with the Caliper and bit size log, but once wavelet transform is taken, spikes are translated as discontinuities, and may not necessarily represent real change in lithology.

2. Authors rely on porosity logs for the fracture estimation, again this assumption suffers from the fact that porosity logs are always computed from some logs (density of NPHI) and hence they are not fundamental observations. So any conclusions based on miscalculation in porosity logs will simply percolate to WT. Also, it is in no way clear how WT helps to identify fractures.

3. Please remember that the companies who spend billion dollars for the drilling can always get FMI logs when they need fracture characterization almost for free, compared to drilling cost, so the best contribution from the authors would be to find out fractures away from the wells for instance using seismic data with the help of WT with some good examples.

4. Please correct the typo errors and improve the language.

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