Geosci. Instrum. Method. Data Syst. Discuss., doi:10.5194/gi-2016-25-RC2, 2016 © Author(s) 2016. CC-BY 3.0 License.





Interactive comment

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 #2

Received and published: 13 December 2016

The manuscript deals with application of wavelet transform and fractals in identified different lithology and fractures from Gamma ray logs and density logs over Costa Rica Convergent Margin. The study is important for identifying different lithology and fractures from the well logs data. Followings are my major and minor comments:

Major comments:

The continuous wavelet transform highly depends on the choice of mother wavelets. The use of mother wavelet may be discussed and what will be effect of using other mother wavelets in identifying the discontinuities and estimation of fractal dimension



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from well logs.

Table 1 changes in fractal dimension values do not seem significant. It will be better to present errors in estimation of holder exponent and fractal dimensions for checking significance of change.

The choice of scale of interest in figure 9 is very subjective and may be discussed in the text. What will be effect of different choices of scale.

Minor Comments:

The term WBFA used in the abstract and other places is not described.

Citation of the figures in the text may be in order. Figure 8 is cited even before figure 1. Figure 7 is cited before figures 5 and 6. Figure 9 is not cited in the text.

Line 104: capital K is not in the equation 2.

Figure 1: Different time scale in top and bottom of figure.

Figure 3 : Deleting few values in figure 3b will be biased and selective. Adding some noise may be better for presenting the results.

The source of well log data may be cited.

Some more key publications on identification of lithology may be cited Fedi (2003) and Bansal et al. (2010) etc.

The Language require major editing.

References: Fedi, M., 2003, Global and Local Multiscale Analysis of Magnetic Susceptibility Data, PAGEOPH, 160,2399-2417.

Bansal, A. R., Gabriel, G. and Dimri, V.P., 2010, Power law distribution of susceptibility and density and its relation to seismic properties: an example from the German Continental Deep Drilling Program (KTB), Journal of Applied Geophysics,72, 123-128.

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