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Nonlinear Processes in Geophysics
Discussions
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Interactive comment on "Universal multifractal Martian topography" *by* F. Landais et al.

Anonymous Referee #1

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This manuscript is well written and provides new results. I have several rather minor comments: - P. 1012, line 24: the parameter alfa is estimated using a second derivative. Furthermore it is a local estimate, around the moment q=1. The authors could estimate it by a best fit among all values admissible for alfa, chosen over a given range (moments q in (0,2)). - It seems that the analysis of this 2D topography field is done along 1D cuts. Why? Could the authors perform analyses spatially in 2D? This is possible using structure functions. Is it possible using Haar wavelets? - P. 1017 line 18. The value H=0.75 for small scales could be related to the fracture value which was found to be close to 0.80 (e.g. Schmittbuhl et al, JGR, 1995). Some discussions on this point may be added in the manuscript. - Typo P. 1017, line 17: "with": there are here some missing words - Table 1: negative values for alfa and C1: this is not possible and should be removed. The text indicates that the experimental curve is linear, hence these values are not relevant and only the H value should be given. - Figs. 2, 5, 7:

please put the units for horizontal axis, and instead of log_10 linear scale, choose real values and a logarithmic scale (which is much more legible).

Interactive comment on Nonlin. Processes Geophys. Discuss., 2, 1007, 2015.