Nonlinear Processes
in Geophysics
Discussions

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Interactive comment on "Site effect classification based on microtremor data analysis using concentration–area fractal model" *by* A. Adib et al.

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1) Comment: Cheng and Agterberg (1996), Sim et al (1999), Goncalves et al (2001) are not using classification method for more than 3 classes but detection tool for extreme data (2 classes, as shown in all plots of those articles). The article from Afzal et al. (2010) proposes to extend the Concentration-Area method to more than two classes without theoretical justification. More than a theoretical work, this article should point out at least a discussion about the justification for the case of more than 2 classes, in the framework of fractal/multifractal. Also the authors should state clearly that their use of the C-A method is extended from the initial version from Cheng et al., 1994. 1) Answer: Cheng et al (1994) did not use any limitation for the C-A method entitled a bi-fractal method. They introduced the model for bi-fractal and multifractal natures (see

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section 4.1 and Appendix of the paper). They wrote formulation for both of them in this Appendix. Cheng and Li (2002) used the model in multifractal nature data. Many researchers used the method for multifractal modelling (e.g., as follow):Cheng, Q., 1994, Multifractal modeling and spatial analysis with GIS: Gold potential estimation in the Mitchell-Sulphurets Area, Northwestern British Columbia: unpublished Ph. D. thesis, University of Ottawa, Ottawa, 268p. Cheng, Q., 1997, Fractal/multifractal modeling and spatial analysis, in Proceedings of the International Association for Mathematical Geology Conference, V. Pawlowsky-Glahn (ed.), Barcelona, Spain, September 22-27, 1, 57-72. Cheng, Q., 1999, Spatial and scaling modeling for geochemical anomaly separation. Journal Geochemical Exploration, 65 (3), 175-194. Goncalves, M. A., Vairinho, M., and Oliveira, V., 1998, Study of geochemical anomalies in Mombeja area using a multifractal methodology and geostatistics, In Proceedings of International Association for Mathematical Geology Meeting. A. Buccianti, G. Nardi, and R. Potenza (eds.), De Frede, Ischia Island,Italy, 2. 590-595. Goncalves, M.A., 2001. Characterization of geochemical distributions using multifractal models. Math. Geol 33 (1), 41-61. Goncalves, M.A., Mateus, A., Oliveira, V., 2001. Geochemical anomaly separation by multifractal modeling. Journal of Geochemical Exploration 72, 91-114. Cheng Q., Li Q., A fractal concentration-area method for assigning a color palette for image representation. Computers &Geosciences., 2002, 28, 567-575 Lima, A., De Vivo, B., Cicchella, D., Cortini, M., Albanese, S., 2003. Multifractal IDW interpolation and fractal filtering method in environmental studies: an application on regional stream sediments of (Italy), Campania region, Applied Geochemistry 18, 1853–1865.

2) Comment: Figure 3: the scale is still missing. 2) Answer: Please replace the new figure 3, the new figure has been attached.

3) Comment: Figure 8: The points without names will improve the lisibility of the figure and the comparison with figure 9. 3) Answer: The new figure has been attached.

4) Comment: Figure 9: The figure would be more easy to interpret in color using the same color legend than figure 8. 4) Answer: The new figure 9 has been prepared and

attached to the E-mail. Please replace it with the earlier.

Please also note the supplement to this comment:
http://www.nonlin-processes-geophys-discuss.net/1/C470/2014/npgd-1-C470-2014-supplement.zip

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