Nonlinear Processes
in Geophysics
Discussions

Interactive comment on "$C \approx 0.85$ **scaling and the universal clustering structure of earthquake networks**" *by* **S. Abe and N. Suzuki**

Anonymous Referee #1

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This brief work tries to explain properties of seismicity on the basis of results found in a network of seismic areas. The method connects two cells x and y if an earthquake takes place in cell y following another one in cell x. One of the main results is a universal clustering coefficient C for the resulting network, found both for epicenters and hypocenters and for different catalogs.

I am hesitating to recommend the publication of this manuscript, for the following reasons:

(1) It is not clear what we should understand on seismicity by knowing the C value; the Authors should add a contribution going beyond the simple discovery that C is as it is.

(2) It is not true that the cell size L is the only parameter. Implicitly, by considering a

catalog, one inherits a lower cutoff magnitude. This was not considered but actually, as many recent studies have demonstrated, it is a relevant aspect. The Authors might consider studying the same network by filtering events according to a chosen lower cutoff that is higher than that of the catalog.

(3) The adjacency matrix A is symmetric, but events are ordered in time: what is the logic of using a time-symmetric matrix? Is there any relation with other studies where the connections are not symmetric but somewhat "causal"?

(4) The discovery via this method that seismicity is quite two-dimensional in Iran was not supported by an independent analysis of the three-dimensional distribution of hypocenters.

Given that the paper is quite brief, I recommend to expand it to better illustrate the points mentioned above.

Minor point: are the figures inverted?

Interactive comment on Nonlin. Processes Geophys. Discuss., 1, 39, 2014.