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Interactive comment on “Complex noise suppression and reconstruction of seismic reflection data from fault structures using Space Lagged Singular Spectral Analysis” by R. K. Tiwari et al.

Anonymous Referee #2

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General comments:

The article is on an application of Singular Spectrum Analysis (SSA) on the analysis of seismic reflection data. Similar to a previously presented poster (Rajesh et al., 2012) the same authors plus one new coauthor present results on simulated and real data.

It is very hard to see, where this new presentation goes beyond the previous one, but what weighs heavier is that aside the concrete example, there is little if anything in this paper that differs from what was presented in Oropeza and Sacchi (2011) or in more detail in the master thesis of Oropeza (2010), which is publicly available on the internet.

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Frankly, I do not see enough added value in the application that warrants publication.

This may be different if in a very major revision instead of linearly aligned channels other spatial configurations are investigated. Then a straightforward utilization of SSA is not possible and some more clever modifications, along the lines of Awichi and Müller (2013), Rodríguez-Aragón and Zhigljavsky (2010) or Shlemov and Golyandina (2014) are required.

Typos:

651_19 needs 652_3 researchers

References:

Awichi, R. O., Müller, W. G., 2013. Improving SSA predictions by inverse distance weighting. *RevStat* 11 (1), 105-119.

Oropeza, V., 2010. The Singular Spectrum Analysis method and its application to seismic data denoising and reconstruction. Thesis at the University of Alberta. URL http://saig.physics.ualberta.ca/s/sites/default/files/upload/theses/Vicente_0.pdf

Rodríguez-Aragón, L. J., Zhigljavsky, A., 2010. Singular spectrum analysis for image processing. *Statistics and Its Interface* 3, 419-426.

Shlemov, A., Golyandina, N., 2014. Shaped extensions of singular spectrum analysis. URL <http://arxiv.org/abs/1401.4980>

Interactive comment on *Nonlin. Processes Geophys. Discuss.*, 1, 649, 2014.

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