

Interactive comment on “Delineation of shallow channel geometry and infill lithology using Spectral decomposition and seismic attributes: A case study from the North Sea Basin, Netherlands” by Kenneth Samuel Okiongbo and Righteous Ombu

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We are sincerely thankful to reviewer 2 for his comments and would like to respond to some of his observations and concerns. 1. The dataset used in this study is a recent high resolution 3-D seismic data graciously made available by dGB Earth Sciences. This data set was acquired and processed using the state of the art technology available at the time in the oil industry. While I do subscribe to the fact that it is good

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to use cutting edge technology in acquiring 3D seismic data and using same for research, more important is the wealth of additional information in the already acquired data beyond the exploration targets of petroleum companies that is of interest to the study of earth system dynamics which needs to be exploited. That is precisely what we have done. Other publications using this same data include: (i) Mojeddifar, S et al. (2015): Porosity prediction from seismic inversion of a similarity attribute based on a pseudo-forward equation (PEE): a case study from the North Sea Basin, Netherlands. *Petroleum Science*, 12, 428-442. (ii) Honorio, B.C et al. (2014): Independent component spectral analysis. *Interpretation*, Vol. 2, SA21-SA29. (iii) Etc

2. We have applied non linear spectral decomposition methods and coherence and curvature attribute analysis to the data. These techniques are classical and highly appropriate and relevant for case studies such as ours.

3. The manuscript is relevant to the NPG audience and not beyond the scope of NPG. This is because literature review shows that NPG had published similar manuscripts that deal with wavelet transform for hydrocarbon reservoir evaluation and immensely benefited readers e.g Saadatinejad M.R. and H. Hanssani (2013), Application of wavelet transform for evaluation of hydrocarbon reservoirs: example from Iranian oil fields in the north of the Persian Gulf. *Nonlinear processes Geophysics*, 20, 231-238.

Interactive comment on Nonlin. Processes Geophys. Discuss., <https://doi.org/10.5194/npg-2017-62>, 2017.

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