

PeerJ #2016:06:11626:0 (Review #2)

"Region-of-interest analyses of one-dimensional biomechanical trajectories: bridging 0D and 1D theory, augmenting statistical power"

We thank the Editors and Reviewer #2 once again for your time. Please find that we have responded to all comments below [using blue text](#) and that we have [highlighted changes to the manuscript in yellow](#).

Thank you,

Todd Pataky, Mark Robinson, and Jos Vanrenterghem

Comments for the author

The new appendix A is a very thorough attempt at clarifying the terminology used in the manuscript and its relation to the one used in the neuroimaging literature. I just hope it won't have the opposite effect of confusing readers by its apparent complexity! I agree with the authors that ROI and VOI are often used interchangeably - the reason behind this is that one can consider a VOI to be a special case of a ROI in 3D. I would therefore simplify Table A.2 to have ROI and VOI equivalent (and the same for ROI and VOI analyses) and oppose them to a SVC analysis (and ignore the inconsistency of the SPM software in its documentation).

[Response:](#) We agree, all suggested changes have been made to Table A.2 and its description. Please find that we have also removed the final paragraph of the Introduction (main manuscript) because we agree that this may unnecessarily complicate the issue.

The new paragraph in the introduction (line 68) somehow implies that the SPM approach has mainly been used in 3D in neuroimaging but this would be ignoring electrophysiology (EEG, MEG), see e.g.:

[1] Kilner et al, Applications of random field theory to electrophysiology. Neuroscience Letters, 2004.

[2] Kiebel and Friston, Statistical parametric mapping for event-related potentials: I. Generic considerations. NeuroImage, 2004.

[3] Kilner and Friston, Topological inference for EEG and MEG. The Annals of Applied Statistics, 2010.

[Response:](#) We agree. Please find that we have added citations to the Kilner (2004) and Kiebel (2004) papers, and that we have revised our phrasing to emphasize SPM's scope beyond neuroimaging.

I still think the dangers of circular analyses are crucial here and have to be highlighted. The authors have added an extra paragraph in the discussion so that might be enough for the moment. The following might be an interesting reference to the authors:

[4] Brooks et al, Data-driven region-of-interest selection without inflating Type I error rate. Psychophysiology, 2016.

Response: Thank you for re-emphasizing this point, we agree that it is a very important issue. Please find that we have added a citation to Brooks (2016) and have also added another paragraph regarding circularity to the Discussion.

At last, sorry for the unclear comment about references ({MarsBar}, {fMRI}, ...), I was simply pointing out that some letters had to be upper case - it might be an issue with the PeerJ formatting though.

Response: Thank you for clarifying, we see now what you mean. This indeed appears to have been caused by PeerJ's CLS formatting. We have overridden the CLS formatting to fix all terms, and we'll re-check all during preprint checks.