

Geosci. Model Dev. Discuss., referee comment RC1
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Comment on gmd-2020-303

Hristo Chipilski (Referee)

Referee comment on "TempestExtremes v2.1: A Community Framework for Feature Detection, Tracking and Analysis in Large Datasets" by Paul A. Ullrich et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2020-303-RC1>, 2021

TempestExtremes (TE) is a framework for the identification and tracking of features in Earth system datasets. The underlying paradigm behind TE relies on the construction of abstract functions (kernels) that can be called directly from the command line and controlled via a highly configurable set of user parameters. In this work, the authors extend the original version of TE by carefully documenting all newly added kernels. Using several examples based on societally important meteorological features, they also demonstrate how one can configure TE for specific Earth system applications by sequentially combining relevant algorithm kernels. The robustness of the enhanced TE package is evident in its successful application to different geophysical features and the agreement of the obtained results with past studies. Because the upgraded version of TE generalizes previous tracking methods, the presented work constitutes an important contribution to the Earth system community as a whole. In view of this scientific merit and the high clarity of presentation, I strongly recommend the publication of the manuscript in GMD after the authors address my fairly minor comments in the attached PDF document.

Please also note the supplement to this comment:

<https://gmd.copernicus.org/preprints/gmd-2020-303/gmd-2020-303-RC1-supplement.pdf>