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Nonlinear Processes in Geophysics
Discussions

Interactive comment on "CNOP based on ACPW for Identifying Sensitive Regions of Typhoon Target Observations with WRF Model" *by* Bin Mu et al.

Anonymous Referee #2

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In the present paper the authors apply the ACPW (see paper for the meaning of this acronym) algorithm to the WRF-ARW model to investigate its feasibility and effectiveness. ACPW has been been proposed by (almost) the same authors (Zhang et al. 2018). Here, the authors (basically) repeat the simulations and analysis of Zhang et al. using WRF-ARW instead of MM5. As in Zhang et al. two typhoons (Fitow and Matmo) serve as a testbed. The results are very similar to that in Zhang et al. (2018) indicating that ACPW can indeed been applied to WRF-ARW too.

General Introducing and evaluating new methods to improve the prediction (or our understanding) of tropical storms are valuable contributions. In my view, however, the

present study does not add (much) to prediction nor understanding beyond Zhang et al. The only new aspect appears that ACPW algorithm may also be applied to other models than MM5, which could be somehow expected. Therefore, unfortunately, I cannot recommend publication. Please note that this does not mean that I disregard the technical efforts to adapt the algorithm to a new model.

Some additional major comments:

- The English needs substantial improvements.

- At the moment the paper reads like an adapted/modified and shortened version of Zhang et al., without trying to get some 'added value'. Furthermore, at some places the meaning is not clear without the Zhang et al. paper (e.g. the definition of 'forecasting benefits' (Chapter 4.3.1), the pseudocode (Table 1 in particular 8,10,11)).

- As the authors note (P2 L10ff, P10L28), the adjoint version of WRF-ARW used for this study appears not very well suited for the present purpose (typhoon prediction). It is not clear how important this issue is for the conclusions drawn by the authors.

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