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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Characterising patterns of heavy precipitation events in the eastern Mediterranean using a weather radar and convection-permitting WRF simulations" *by* Moshe Armon et al.

Anonymous Referee #2

Received and published: 3 November 2019

The manuscript presents a study focusing on HPEs using weather radar data and convection-permitting numerical simulations. Overall, it is an interesting study that merits publication. In particular, the consideration of a long radar data time series is important, deviating from the common practice of considering a few HPEs. Further, the methodology followed for evaluating model performance is thorough, providing useful insights. I recommend publication subject to minor revisions summarised as follows.

Comments 1. Title: I believe that the title of the manuscript is a bit misleading. To my view, the authors focus more on evaluating the WRF model at convection-permitting

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Discussion paper

scales, than providing a study for the characterisation of HPEs in the study region. Hence, I would suggest changing the title of the manuscript, to better reflect the real subject of the presented study. 2. Sect. 4.1.2: Two poorly simulated events were identified and some reasoning is provided in the Discussion, mainly focused on the quality of the large-scale driving reanalysis. Therefore, it would be interesting to know if the authors did check the driving ERA-Interim data for these two events, and if so, what can be concluded? Were it really an issue of bad boundary conditions? In addition, what were the results obtained from the coarser resolution domains? Were they equally poor? Such an elaboration would strengthen the authors' claim about the poor model performance. 3. Section 4.2.1 could be moved up, before the presentation of the model evaluation, as it discusses results based on observations. 4. Fig.3: Instead of presenting the WRF/RADAR ratio, the authors should consider presenting either the bias (WRF-RADAR) or transform the ratio to %. This would facilitate the interpretation of evaluation results. 5. L123: It would be useful to provide information on the interpolation method? Was it bilinear, bicubic? 6. Quality of the figures needs improvement for readability. 7. The manuscript text needs a thorough proof-reading for correcting numerous grammar and spelling errors.

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