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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Assessing the impact of SSTs on a simulated medicane using ensemble simulations" *by* Robin Noyelle et al.

Anonymous Referee #1

Received and published: 8 October 2018

The paper discusses the sensitivity of a simulation of a medicane to uniform changes on sea surface temperature (SST). It clearly shows that the impact of SST is primarily on the intensity of the medicane. The results are well presented and the paper well written. However the paper suffers from a lack of documentation of the medicane and its environment (large-scale flow and SST). The major comments listed below should be considered before publication in NHESS.

Major comments

Description of the medicane. This should be done in terms of track and MSLP minimum. A description of the upper-level steering flow and of SST is also needed.

Justification on SST change. The SST field in a range of -4K to +6K. What is the

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rationale for changing SST over such a wide range, largely beyond the uncertainty ion the SST measurement?

Other comments

Page 4, line 3. The Hart diagram was first applied to medicanes by Chaboureau et al. (2012). It was not used by Davolio et al. (2009)

Page 5, line 24. At ΔSST=0K, only 80% of the ensemble generate a medicane. This suggests that other factors than SST are important for the development of the medicane. It would be worthwhile to comment this result.

Page 6, line 8. As the large-scale steering flow plays a dominant role, it should therefore be documented somehow in a figure.

Page 6, line 21. Please justify why the **composite** minimum of mslp is shown, instead of the median value for example. The same question holds for Figures 6, 7 and 8.

Page 6, line 27. Please plot a map of SST to show its not uniform distribution.

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