Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2017-145-RC1, 2017

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "On the Relationship Between Atmospheric Rivers, Weather Types and Floods in Galicia (NW Spain)" *by* Jorge Eiras-Barca et al.

Anonymous Referee #1

Received and published: 4 September 2017

This manuscript analyzes the connection between Atmospheric Rivers and floods under the different weather types obtained in the area of study. The paper is focused in the area of Galicia and another point of interest is the analysis in two separately areas with different characteristics. The manuscript is a good contribution to understand synoptic conditions associated with floods and the influence of AR in severe flooding. It may help to enhance extreme episodes forecasting in Galicia and of interest to emergency services. In my opinion the manuscript is acceptable after minor revisions.

First of all, some details must be added with reference to the data and methods chapter. It would be necessary to give information about the total number of flood events

Printer-friendly version

Discussion paper

included in this study. Is any remarkable difference between COSTA and SIL number of flood events? Furthermore, I think this database contains flood events due to some causes as river flooding, drainage problems, flood events, etc. For a better understanding, it would be of interest mention if the manuscript takes into account all of them or it is focused on a selection.

On the other hand, there is not a lot of information about the data used for the synoptic classification; is it supposed that SLP values are provided by NCAR for the same period? There is the reference to the paper carried out by Trigo et al., 2000; are the same 16 grid points used in both studies? The rules to define different types of circulation are supposed to be the same established by Trigo et al., 2000, can you confirm it? Finally, I suggest including a table in this chapter with the WTs associated to the extended winter and summer months with the description of each class of WTs.

In section 3 the frequency of each WTs is presented. Are the results in concordance with other WTs studies carried out in the same area for precipitation episodes?

In the introduction section is stated as one of the scopes that this study may be useful to properly understand and predict the damages caused by FEs. The flood events database includes damage information for each event (injured people, damages in property, etc). However, in the results section this information is not presented. Have you analyzed it? If a damage analysis has not been carried out, it would be necessary to eliminate any damage reference or replace by the prediction of precipitation amounts (presented in section 3.1).

In the conclusions you sum up the most remarkable results obtained. In my opinion it is necessary to give some remarks about future work and how to integrate this information as a useful tool in emergency warnings.

Finally, as specific suggestions on page number 6 lines 5-6 there is an internal comment, figure 5 description is not correct (precipitation ratio instead of frequency of occurrence), description of Table A1 an A2 probably is in terms of amount of precipitation

instead of damage and it would be better another English revision because some sentences are difficult to understand.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2017-145, 2017.