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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Modelling fire frequency and area burned across phytoclimatic regions in Spain using reanalysis data and the Canadian Fire Weather Index System" *by* J. Bedia et al.

Anonymous Referee #3

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General comments:

The main objective of the research introduced in the manuscript is to examine the use of meteorological data to explain spatial and temporal variation of fire occurrence and burned area in Spain. Spain, as a large country has several climate zones characterized by different kinds of vegetation and fire danger conditions and in this study the authors have examined the skill of fire occurrence models for each phytoclimatic region separately. The study is an interesting example of using advanced statistical methods for the prediction of occurrence of fires. However, the results of the study are not very unforeseen; Fire Weather Index (FWI) and air temperature explain the occurrence of

fires relatively well and the other parameters not that well. Corresponding results have been obtained in many other studies. Sure this study demonstrates the applicability of phytoclimatic zones to pinpoint the differences in fire regimes. One must still remember that in addition to natural factors like climate and vegetation the occurrence of fires is very much dependent on the socioeconomic factors like fire detection and suppression systems, general public attitude on fire use, forest road network etc. and this is why skill of models using only natural factor as predictors cannot be much better than the skill of the model used in this study.

Specific comments:

The impact of socioeconomic factors on fires should be discussed to complement the discussion on the applicability of this model.

In some regions in Spain the climate and vegetation are obviously favorable to the occurrence of fires during fire season, i.e. it is quite sure that certain time of the year there is a fire (or several) inside the region. In that sense modeling the probability that inside a certain relatively large region there is a fire(s) does not create much new information. Authors should justify why to model this kind of phenomena.

Figure 3 contains lot of information but as such it is very difficult or almost impossible to read. This figure should be redesigned and authors should consider are all the panels (especially the "zebra" ones) providing essential new information.

Technical comments:

Authors should check the manuscript to ensure that the use e.g. names of variables is consistent in the whole document. Like for example the names of climatic variables (see Table 2, Table 5 and Figure 6). There are some misspellings e.g. in Abstract second paragraph "We found to contracting. . ." should be "We found two . . ."

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 4891, 2013.