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Natural Hazards and Earth System Sciences
Discussions



# *Interactive comment on* "Precipitation dominates fire occurrence in Greece (1900–2010): its dual role in fuel build-up and dryness" *by* F. Xystrakis et al.

**Anonymous Referee #4**

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The manuscript shows an original methodological approach. The conclusions are useful to understand the factors related to burned area. Only one meteorological station is considered. More detail about its location should be added and also this limitation should be discussed. An approximation on how to include the results to forecast fires would be strongly recommended.

-In the introduction section the weather factors related to burned area are shown, but it should also be included in more detail the influence of moisture conditions. In this sense, Jurdao et al. 2013 (Modelling fire ignition probability from satellite estimates of live fuel Moisture content)and Chuvieco et al.2009 (Prediction of ïňĄre occurrence from



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live fuel moisture content measurements in a Mediterranean ecosystem)are strongly recommended. It could be included in Page 696 line 4.

-Coherence with the terms "burned or burnt".

-Page 694, line 14, an analysis comparing different fire sizes have not been performed. Therefore, it can not be stated that spring precipitation coincide with large burnt area burned. (In addition, "large burnt area burned" is redundant). In this sense, following other authors studies also focused on mediterranean ecosystems, it would be useful to perform an analyse considereing different fire sizes. Chuvieco et al. (2009)included a similiar approach and also other authors (Dennison et al. 2008).

-Page 698, 2.2. Section: Define the months included in the fire season precipitation variable. In addition, what about aggregating also the temperature in the fire season? Perhaps it would be useful. Additionally, it seams as in the results section an analyse per season would be shown. However, thi is not the case. Therefore, I recommed to define in the methods section, exactly what is going to be analyzed. If winter precipitation or autumn precipitation is not analyzed, perhaps it should not be shown in figure 2 as it does not offer any information related to the aim of the paper.

-Page 696, line 10: Extreme fire weather? (perhaps, extreme fire season weather? In this case, first define fire season).

-Page 697, line 11: How is it possible to develop a forecasting model if the main explanatory variable is obtained with the mean of the precipitation recorded during the fire season?.

-Page 699, line 1: change "are statistically" to "were statistically". -Page 699, line 20: Coherence "log transformation (Page 698, line 22) or ln transformation". -Page 701, line 8: the asumption of "the majority" is questionable since 53.3% and 57.14% are close to the mean. Perhaps change to "more than the mean". -Page 702, lines 6-10, 20-23, 27-29. Normally, in the results section, the results are just describe but their



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explanation is performed in the discussion section. Perhaps move this explanations to the discussion section. -Page 705, lines 10-13. Could you add an idea on how to do that? -Figure 1: "Area burned -corrected" If it is written in the legend, perhaps it would be useful to explain that in the caption. -After reading the paper I was curious about knowing how the temperature (in the fire season) and the precipitation (in the fire season) are relate to each other. Perhaps this analyses is useful.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 693, 2013.