**Biogeosciences
Discussions**

# *Interactive comment on* "Separating agricultural and non-agricultural fire seasonality at regional scales" *by* B. I. Magi et al.

**Anonymous Referee #1**

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The paper attempts to differentiate agricultural (cropping and pastoral) and non-agricultural fires. The authors argue that this separation is important for a number of reasons (emissions, carbon cycle, land use etc.). The methodology has been applied at the global scale. Whilst the data sets used to undertake this analysis are not novel or developed in the study, the analysis of these data sets are of interest and do shed some light on this issue (which appears to be important as we try and understand the spatial/temporal distribution of fire). I believe the methods of analysis are robust and make interesting reading. This paper has some impact and should be cited in future. I have the following minor comments that the authors should take into account.

Page 2, lines 20-22: There are some issues with the English in this section. Also a definition of projected climate change is needed.

Page 2, lines 23-27: What is an agricultural burning practice. Some examples of practices and how the signal can be detected/measured/observed from space is needed. Our hypothesis here is to consider the flammability of fuels as an indicator? What is a non-agricultural land cover. Avoid general terms or ambiguities in this section.

Page 3, lines 1-5: Why is the distribution of the globe best served by the one you choose? More justification is needed. Does it fit the agricultural distributions of the world. In fact can you not section your results against the results of the temporal distributions that you find.

Page 3, Section 2.2: I have concerns in this section. I understand that GFED database derives its burned areas from the MODIS fire count data (or thermal anomalies). Therefore, are you not using the same data set twice (or one that is similar)? Explain that MODIS and AQUA collect active fire data 4xdaily under cloud free conditions.

Page 3, line 25: What does 5' mean (minutes, seconds?). This HYDE data is critical to your analysis and your treatment of it in the manuscript is weak and not sufficient. How has the product been validated? Are there areas of uncertainty? You make assumptions in Section 2.3 that need to be better supported. Please think about strengthening this section.

Results Section: The interpretation relies heavily on a comparison with the findings of Korontzi et al. (2006) and Le Page et al. (2010). This takes place in most subsections. The authors need to consider who the presentation of these results is made with the greatest impact. Hence, what you need to make clearer is what the differences between your results and those published before. More importantly why the results differ and the magnitude of the difference. You need to avoid repetition of results and if they are all identical, the paper need not be published. Furthermore, how do the results of the burned areas versus the hotspot data differ?

Conclusions, lines 24-29: This whole section seems to be detached from the results you have presented. I think more work is needed before you make these claims.

I do hope you can take these comments into account to improve the paper.