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## ***Interactive comment on “Comparing the impacts of 2003 and 2010 heatwaves in NPP over Europe” by A. Bastos et al.***

**J. FISHER (Referee)**

joshbfisher@gmail.com

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This is potentially a useful study to add to the literature on the MODIS vegetation summary of the two recent important European droughts of 2003 and 2010. Numerous problems in the analytical approach, however, make the study confusing with logical flow to be desired. In the end, the take home message is that there are maps of the droughts in 2003 and 2010, and that the droughts were different from one another. This is very “least-publishable-unit”. It is not clear why the authors selected various steps to their analysis, what differences between datasets mean, and how more sophisticated dataset combination analyses can be used to shed new science. The authors do not make a good case of what new science their paper brings to the literature that was not already known. However, there are two key pieces to this paper that motivate hope–

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the use of remote sensing data and the application to the two large droughts. With thorough revision, the paper may be a useful contribution.

## Abstract

- The choice of “selected” French and Russian regions for summary numbers is confusing and does not connect well to the reader interest in what those numbers look like for the entire drought-stricken regions.

## Introduction

- The Introduction is largely well written. However, it does not lead in to why the authors are doing what they are doing, given the previous research done already on the events. Later, this problem propagates as the analytical approach does not follow a logical flow.

## Methods

- P15883L17: “Reanalyzes” → “Reanalysis”

- P15883. It is good that the authors include a statement on how well MOD17 has done in previous studies. However, it is far from hidden that MOD17 has been shown to suffer in perhaps an even greater number of studies. This aspect should be addressed head on, rather than ignored, by the authors, as readers may immediately disregard their study because of a lack of trust in MOD17. MOD17A2 is even lesser known than MOD17A3.

- Some paragraph should be included on how the analyses were done given that all the datasets were of widely varying resolutions. Actually, in looking back, it appears that the authors did not do any combination analyses, though this seems like it would be useful.

## Results

- It is not clear why the authors separate western and eastern Europe for analysis. It is not clear why 25E is the division. It appears that the authors did this to make their

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10, C6356–C6358, 2013

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results look better, not really reflecting a Europe-wide drought in both years.

- Fig 2. Make the seasonal median black line thicker. It is not clear which one it is (one would expect it to be somewhere in the middle of the percentiles, but it appears to be at the bottom.

- Fig 2. Perhaps labeling it a-f, instead of a-b, would help the reader follow which descriptions correspond to which sub-figures.

- It is not clear why the authors used both MOD17A2 and MOD17A3, rather than just one. Both basically show the same spatial patterns, which comprise nearly all of the figures/results. It would be interesting if some comparison were made, with concrete conclusions explaining differences.

- The results are really just a bunch of maps showing what we already know, little else.

#### Discussion

- Poorly written. This is basically just Results-continued. Very little tie back to the literature.

Apologies for the very critical review, nobody likes to receive these! I'm sure you will continue to improve on the paper to make it stronger.

Josh Fisher

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Interactive comment on Biogeosciences Discuss., 10, 15879, 2013.

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