

Interactive comment on “Dynamic changes of terrestrial net primary production and its feedback to evapotranspiration” by Zhi Li et al.

Anonymous Referee #2

Received and published: 16 April 2016

Review Report

Paper Title: Dynamic changes of terrestrial net primary production and its feedback to evapotranspiration

Authors: Zhi Li, Yaning Chen, Yang Wang, and Gonghuan Fang

Overall Comments:

In this paper, Li et al examined the change of terrestrial net primary production over the period of 2000 to 2014 based on NASA’s Global 1-km MODIS NPP dataset and analyzed the factors determining the observed net primary productivity (NPP) change and its possible feedbacks to the atmosphere using statistical analysis. The major datasets used are all secondary by nature. The issues targeted at this research are

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significant. The research design is generally justified, and the findings are interesting. I suggest that a moderate revision should be conducted to address or clarify several issues that are outlined below.

First, the research aimed to examine factors controlling net primary productivity (NPP) change and its feedbacks to the atmosphere, but the actual design was largely made to address the first part of the objective. More efforts on the second part would help bridge a knowledge gap and would definitely add values to the entire work.

Second, the authors need to be aware that from statistical perspective, correlation and causation are two related but distinct concepts. Correlation refers to how closely two sets of information or data are related, while causation means the act or process of causing that is often referred to as “cause and effect”. Correlation may imply causation but in some cases, such a relation may not be true. Adding some more physical or theoretical explanation of the statistical relationship would help understand the causation.

Last, I understand English is not the mother language for these authors, and they must have made substantial efforts in polishing the English for the current submission. But there are still some small errors in English usage and grammar throughout the entire manuscript. These small errors collectively undermine the scholarly quality of this article. These authors are urged to find someone with competent English to edit the text.

Some more specific comments can be found from the next section of my review report.

Specific Comments:

1. Abstract

The abstract is too long and is not quite coherent. It needs to be better organized and written. Although the findings are present, it is not clear why these authors conducted this research, what would be the objectives, and what methods they have used.

2. Key words Should include a term for the geographical area

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3. Introduction

The literature review could be more coherent with specific methods and critical issues (e.g. temporal and spatial scales) targeted. Also

Additional context would help justify the three specific objectives targeted.

4. Data and Methodology

Data: For each dataset, supply a brief description including the source. How did you resample and reclassify them?

Methods: The authors used the NPP datasets from MODIS, and it does not seem there is no need to have a lengthy discussion on the algorithms (Equations 1-7) used by NASA in a methodology section. This section should focus on the specific methods developed by these authors.

5. Results and Analyses

Statistical correlation and causation are related but different concepts. See my general comments. Need to check some sentences with strong statements (of causation).

6. Tables

Table 1: Line 446: remove "over". The heading for Column 4 is not correct. Please double check this.

7. Figures (changes in both captions and map legends)

Figure 1: use "Temporospatial". Which year of C and D for? Legends (C and D): remove "trend"

Figure 2: remove "trend" in the legend

Figure 3: add "or" in front of (d)

Figure 4: add a map to show NPP (should be (a)). Also remove "trend" in the legend.

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Figure 5: Remove "trend" in the legend. Change the title into "—in layers with different depths."

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-87, 2016.

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