

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

Anonymous Referee #1

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I still strongly recommend that the authors find an English editor who is experienced with scientific writing to proofread this manuscript. Only grammatical checking is not enough. For example, the every first sentence of the Abstract is problematic, "The Earth has experienced a dramatic increase in global climate warming since 2000". People may interpret sentence as that the Earth has been increasing (getting bigger and bigger) since 2000, which apparently is not what the authors intend to say.

The first couple of sentences of the abstract can be revised as follows, "The dramatic increase of global temperature since year 2000 has a considerable impact on the global water cycle and vegetation dynamics, which has been extensively studied. However, little has been done about recent feedback of vegetation to climate in different parts of the world."

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Based on this first sentence, it seems that the main research question of this study is about this vegetation (NPP) -> climate feedback, but then it is not clear what purpose the next sentence "A few studies focused on feedback . . . evapotranspiration" is serving. First, if there are already "a few studies", then what is special (novel) with your study? Do you actually mean "few" instead of "a few"? Second, what is the role of evapotranspiration in addressing NPP -> climate feedback? You need to provide a connection between it and the main research question (NPP -> climate).

The next couple of sentences reporting NPP changes in north and south hemispheres are another jump, without apparent connection with the NPP->climate feedback. The last sentence of the first paragraph of Abstract entirely reverses the question: now you are talking about climate -> NPP.

It is uncommon that an abstract has more than one paragraph. More importantly, you need a sentence or two to connect the content of the second paragraph to the main issue of this study (NPP -> climate). I think the main point you want to make is that vegetation has a feedback to climate through ET.

I think the statements (predictions) you made in the second paragraph are confusing. It seems to me that what you are saying is that no matter NPP increases (in NH) or decreases (in SH), it will lead to drought. I don't see sustentative analysis in your paper that supports these predictions. For example, in Figure 3, NPP and PDSI are positively correlated in some places and negatively correlated in other places. I don't see that you have an analysis to show which (positive or negative) is dominant in different regions.

In the last sentence of Abstract, you use a term "negative feedback". I am not sure what you mean by this term. In system science, "negative feedback" means that the feedbacks of the two parties "discourage" each other and finally the system reaches an equilibrium status. "Positive feedback" means that the feedbacks of the two parties "encourage" each other and "the flapping of the wings of a butterfly" may finally cause "a big storm".

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My main suggestion is that the authors want to first clearly sort out the main logic of this paper. If the main research question is the feedback of NPP to climate, and the main point is that EP is the means of this feedback, then this logic needs to be very clearly presented and all the materials need to be organized around it. Without this big picture in mind, it is easy to get lost in details, e.g., flip back and forth between NPP -> climate and climate -> NPP.

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