

Interactive comment on “Multiyear precipitation reduction strongly decrease carbon uptake over North China” by W. P. Yuan et al.

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Response to Referee 3 Comments

General Comments

Precipitation and drought act as interesting and critical factors which control the function of ecosystem, especially the function of vegetation. The present study focused on the impacts of drought which is closely associated with precipitation, on the carbon fluxes of the terrestrial ecosystem in northern China from 1999 to 2011. Using four models (CASA, MODIS-GPP, EC-LUE, and IBIS), the research was able to track the trend of changes in the carbon fluxes which has been validated to be true over the last few decades. It would be better if there were some more details in this manuscript

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on the applicability of the four models in north China for a better understanding of the research. Also, better if there were more field data to be used during the validation of the results, anyway, the results are making senses and important for understanding the roles of precipitation and drought in terrestrial ecosystem in north China and will help in local policy-making. On the whole, this manuscript is acceptable from my end after the following revisions according to the requirements of submission.

Authors' response: Thank you for positive comments.

Specific Comments

1. In Fig. 4, it will be better if some of the values for the X, Y axes have '0' before the decimal point, and so they are with the other values in the other Figures in the manuscripts.

Authors' response: We will revise them.

2. In Fig.6, small revisions should be done because the equations in the pictures are not readable.

Authors' response: We will improve the figure.

3. In Fig.7, the 'yr-1' in the unit for the maize yield anomalies ($\text{Kg ha}^{-1} \text{ yr}^{-1}$) should be consistent with 'year-1' in the unit of NEP (Pg C year^{-1})

Authors' response: Yes. As the first referee pointed out, we will add the total corn yield information in this figure.

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