

## ***Interactive comment on “Attributing Regional Trends of Evapotranspiration and Gross Primary Productivity with Remote Sensing: A case study in the North China Plain” by Xingguo Mo et al.***

**Anonymous Referee #1**

Received and published: 13 October 2016

The authors conducted a study on the problem of climate and land use changes on vegetation ET using the VIP model. The manuscript is very interesting. But some problems should be improved regarding the robustness of the results. Major comments are given below.

Abstract L21: What does the word “management” mean?

Introduction L47-59 and L62~89: More thoroughly literature review is needed (such as Zhou et al. "Global pattern for the effect of climate and land cover on water yield." Nature communications 6 (2015); Chen et al. "50-year evapotranspiration declining and potential causations in subtropical Guangdong province, southern China." Catena 128 (2015): 185-194.). Authors should summarize the different change trends of ET

C1

rather than listing some case studies. I also suggest that authors stated the pattern studies and mechanism studies separately. More potential influencing factors of ET changes should be mentioned.

Results analysis L272-281 Fig4: Even though the simulated GPP at the country scale showed good linear relationship with the statistic GPP. But, from Fig.4, we can clearly find the model overestimates 12%~130% of the GPP when  $GPP < 1200$ , and underestimates 17%~58% of the GPP when  $GPP > 2400$  in the year 2000. The simulation error is also similar for the year 2005. The model might bring some uncertain influences on the trends of low and high GPP regions.

Fig.6, 7 and 10: I suggest the authors adding average NDVI, GPP, and ET of the study area.

---

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-419, 2016.

C2