Hydrology and
Earth System
Sciences

Discussions

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 #2

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The manuscript analyzes the tendency of time-series GPP and ET simulated from VIP model, and the results agreed well with eddy covariance measurements. Quantitative analysis of the effects on the variations of GPP and ET are presented, which could provide scientific supports for the improvement of vegetation productivity and water use efficiency. The topic is relevant and suitable for HESS, however, the entire manuscript should be thoroughly revised and proofread (by native speakers).

MAJOR COMMENTS:

1. Multi-scale data were used in this study, for example, land cover classification (derived from Landsat TM and MODIS), NDVI products, meteorological data, eddy flux data, therefore, the most concerned issue is how authors dealt properly with the scaling

problem. More details of data preprocesses should be added in Section 2.3. 2. Different vegetation types have specific parameters in VIP model? Only farmland was considered in this research? The expressions and the specific parameters of VIP model used in this study should be provided. 3. Line 254-256: How did the authors calculate the biases of GPP and ET? The model predictions are affected by some associated uncertainties (input data, parameters, et al.). What are the effects of these uncertainties on the simulation results of GPP and ET? 4. The full names of abbreviated words should be provided for their first appearance, for example, VIP model. 5. All figures' types are not uniform, for example, font types are different; image scales are different. In fact, it would be better to draw the figures (plotting, bar charts) by some professional software (Origin, SigmaPlot, et al.).

SPECIFIC COMMENTS:

1. Line 191: "winther" or "winter". 2. Among the model outputs, one grid represents 8*8 km2, however the tower flux presents a small "footprint". How did the authors consider this issue? 3. Line 255: what is "absolute relative biases"? 4. Line 266: GPP performances were not shown in Fig.2. 5. Line 273: How was the yield data converted to GPP? Carbon content rates? 6. Line 395: Where is Fig.8b? 7. Line 405: please change the word "thant" to "than". 8. Line 408: The description of ET on spatial scale was shown in Fig.10. 9. Line 668-671: The sentence is confused. Please revise it. 10. The references format is confused.

Given these questions, I would recommend the manuscript with major revision.

Please also note the supplement to this comment:
http://www.hydrol-earth-syst-sci-discuss.net/hess-2016-419/hess-2016-419-RC2-supplement.pdf