

## ***Interactive comment on “Changes of evapotranspiration and water yield in China’s terrestrial ecosystems during the period from 2000 to 2010” by Y. Liu et al.***

**Anonymous Referee #1**

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The authors contacted a comprehensive ET simulation study for continental China for the period from 2000 to 2010 using an energy balance and ecosystem model, BEPS.

The model was first evaluated with site level data of Eddy Flux measurements and large basin scale statistical data published by the governmental authority.

I found that the work was important and the effort was impressive. The modeling tools represent the best available for continental scale ecohydrological modeling studies.

The authors concluded that over the past decade ET and water yield varied dramatically in some regions across China as a result of climatic variability and landuse

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change.

Although I like the work overall, I found the study does not provide much insights of regional ET distribution and dynamics and its relationship to climate and LAI. The authors state their results are comparable to all other studies, then why this should this paper be published to advance our understanding ET and water yield in China?

I suggest the authors focus on a few important questions in hydrology rather than trying to addressing all in one single manuscript. For example

1. How landuse change and LAI change have altered ET and water yield in ET? some modeling experiments by fixing climate or landuse (LAI) may answer this type question.
2. ET is controlled by many factors as identified by the authors. But, in discussion, the authors separate each factor and thus can result in erroneous conclusions, such as the role of LAI in affecting ET. At the continental scale, the author should look at multiple variables (LAI, P, Temp) in looking at the ET or water yield gradient in China.
3. What are the advantages of the BEPS’s model? I was not clear the unique contribution of this study? The validation for the cropland site was not not at all, but no explanation what cause the underestimation. The model validation with the large basin was not very convincing due to the size of the basin.

In summary, this paper is to address too many questions and lacks science focus, thus it requires an major revision.

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