

Interactive comment on “Analyzing the impact of groundwater flow and storage changes on Budyko relationships across the continental US” by Laura E. Condon and Reed M. Maxwell

Anonymous Referee #1

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My major concern on this MS are as follows:

The conclusions of this study are heavily relied on model performance: the validation of ET, groundwater, streamflow are needed, although the authors directed readers towards other papers.

The judgements are too strong: one-year simulation data was used to judge long term assumption; at least the authors should mention that they only check shortcoming of the short-term application of budyko hypothesis; all of the words in abstract and conclusions should be constrained on this aspect (short term application).

In the abstract, “trans-watershed lateral flow” (line 15) was mentioned, but only “ground-

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water surface water exchanges” are considered in this study as described in Methods section (2.4). If there exists “trans-watershed lateral flow”, all the three methods should take it into consideration before comparison

In addition, some text writing skills also need more efforts: The descriptions of the methods should all put into the Methods section: e.g. lines 412-414; lines 415-436; lines 481-484

Small errors: Line 13: “sized”? Line 342: “than”?

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