Review of Data-driven estimates of evapotranspiration and its drivers in the Congo Basin by Burnett et al.,

General Comments:

This study produces a monthly basin-wide ET estimates for the Congo basin based on the water balance approach for the period April 2002 to December 2016 evaluated against previous literature estimates and six global ET products. Drivers were investigated for the seasonal and interannual variability. This study is very well structured and written, with a good flow and ease to read and understand the concepts being used. The author has been thorough in his review of existing studies, making good comparisons and analyses to their findings throughout the paper. I have a few minor comments as follows.

It would be interesting if you could discuss whether the use of this technique can be easily applied to other basins even without the use of a precipitation product being developed specifically for a particular basin under study? The findings are very interesting and can be useful for other larger basins in Africa such as the Niger basin with a large delta and the Nile basin.

You compare the ETwb with six available global ET products. As I see you have referenced Weerasingle et al., that also found that GLEAM and MOD16A2 were substantially underestimating ET at the long-term annual scale, whereas other products within that study had much lower biases. It would be interesting to see the same comparison with one or more of the products with lower biases in their study to see if those products capture the seasonal variations and bias better than the products being analysed in this study.

Specific Comments:

P3L65 – you say that studies assume no change in water storage when applying the water balance equation and state 'an assumption with little support'. Is this really true? In the study previously mentioned, Weerasinghe et al., they have looked at the largest contribution of the change in annual water storage from a study using GRACE data and found this to be 20mm yr-1. They then applied this to several basins in Africa including the Congo basin and found there to be only a 2.3% representation of total long-term annual average ET. I believe this assumption has been made for large watersheds and for long-term averages and there is actually a lot of existing studies to support this. Be careful with this statement. Also, In all studies, if it is possible to use the change in storage, this should always give better results, although it may be negligible depending on the timescale and size of area and thus may not be the most important aspect of their studies if not looking at smaller temporal and spatial scales.

Technical Comments:

P1L10 – '…second-largest river basin *in* the world…'

Table 1 caption has 'in' twice consecutively.

P14L355 – I would mention here the three variables you are considering in the text so the reader does not have to go to the figure before they know.