

Interactive comment on “The atmospheric branch of the hydrological cycle over the Indus, Ganges and Brahmaputra River basins” by Rogert Sorí et al.

Anonymous Referee #2

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The authors have performed a very important analysis on the moisture transport that controls the water budget of IGB. The topic is interesting and suits well to the scope of the journal. However, I have few comments, which the authors may address.

1. The authors have mentioned about Pathak et al. (2017). It is not clear, what are the extra added information/ findings from this analysis with respect to Pathak et al. (2017). I can see that majority of the conclusions are similar to both Pathak et al (2017) and Pathak et al (2015). It would be good, if the authors highlight in details of the agreements and disagreements with Pathak et al (2015) and Pathak et al. (2017) and specify the added findings from the present analysis.

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2. The value of P-E in a water budget equation for monthly scales typically equates to the divergence with a negative sign. Often it is observed that such divergence is a better estimate when we perform any analysis at a monthly scale. Further to this, a recent article shows that uncertainty across reanalysis can be reduced by considering divergence. I can understand that the authors probably need daily data for their analysis, but a comment or discussion with some scope for future research may be a good addition. This is specifically because, the authors have used a single reanalysis, and use of multiple reanalysis may increase uncertainty, which we need to reduce. The authors may follow: <https://www.nature.com/articles/srep29664>

3. The authors have used CRU data and I am just wondering if they will get similar conclusions with IMD/ Aphrodite data. As the IMD/ Aphrodite uses more number of stations, and hence, such a check is better to be performed. Just a suggestion from this reviewer.

4. I have some concern about combining Arabian sea and Indian Ocean. I would rather be interested in considering them separately. This will give us some idea of the relative contributions from them.

5. Some comments on the contribution from Monsoon Depressions and their role in water cycle would be of great interest.

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