

Review II of Dey et al. | Atmospheric water transport connectivity within and between Ocean basins and land

First of all, I thank the authors for addressing all the points I've raised in my initial review. I am happy with the responses, and would like to focus on a single point for this second review:

To enhance the comparability to other studies, recycling ratios of, e.g., Amazonia, or the Mississippi or Congo basin would be of great interest (e.g., Trenberth, 1999; Tuinenburg et al., 2020). It could also be interesting to provide a global mean (or median; see Sodemann, 2020) residence time, which has been debated in recent years (Läderach & Sodemann, 2016; van der Ent & Tuinenburg, 2017; Sodemann, 2020).

Answer : The global atmospheric water residence time maps and global average water residence time are now included in the supplementary material and also in line no: 202 -207. The objective of the present study is to get a global picture of the atmospheric water connection between the Ocean basins and global landmass. We did not divided the global landmass into various basins or continents and thus it is not possible to compute the recycling ratios for Amazonia, or the Mississippi or Congo basin from the present study. However, we have now mentioned in the the abstract (line no: 13 -15) and also in line no: 198 -200 that the land-to-land atmospheric water transport is prominent over the Amazon basin, western coast of South America, Congo basin etc

My response: Thank you for adding the Supplementary Figure with the residence times, I think this makes comparisons to existing work much easier. A few comments on this Figure:

- If at all possible, please reconsider the colormap — it is a very informative Figure, and would benefit from a, e.g., perceptually uniform colormap.
- Maybe it could be useful to conceptually distinguish between 'forward' (from a specific net evaporation event, or source, to any precipitation event, or sink) and 'backward' trajectories (going back in time from net precipitation to any evaporative source). Any hint along these lines in the main text (or the Fig. caption) could be useful for the reader, I am not sure if 'from the evaporation and precipitation point of view' as in the main text already makes it as clear as it could be.
- Last but not least, I struggle with the fact that the global average residence time of water differs so much for the different perspectives; while discrepancies at smaller scales are to be expected and intuitive, I would expect the global averages to be nearly identical (not necessarily equal, as the atmosphere is warming and hence needs to gain moisture if maintaining a constant relative humidity). Could this be caused by the fact that trajectories are only initiated for 6-hourly net evaporation (and only end for net precipitation)? As I reasoned in my initial review, this probably works less well in the tropics than elsewhere, and could cause the apparent discrepancy between global residence times.