Hydrology and Earth System Sciences Discussions

Interactive comment on "Throughfall and temporal trends of rainfall redistribution in an open tropical rainforest, south-western Amazonia (Rondônia, Brazil)" *by* S. Germer et al.

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The paper is an interesting discussion how throughfall can be influenced by a certain palm species, whereby throughfall can be concentrated in different points, leading sometimes to negative interception measurements. In a sense, these palm trees occasionally funnel the rainfall intercepted by the canopy towards hotspots where the throughfall is concentrated. If you seek shelter for the rain under a palm tree, then that place is not where you want to stand.

I could not find a flaw in the reasoning of the authors and I find it an interesting contribution to the knowledge on throughfall. There are a couple of minor corrections I would

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like to see that I summarize below. Some of these are conceptual. Some of these may seem nitpicking, but I am afraid it is important to be rigorous in these matters.

1. I do not like the use of the word loss. The authors mention interception losses throughout the paper. In hydrology there is no such thing as a loss. Evaporation from interception is direct feedback of moisture to the atmosphere, which is no loss to the terrestrial water cycle (if we can speak of losses at all). The moisture feedback replenishes the atmospheric moisture content, which in turn sustains rainfall. In the Amazonian forest moisture recycling is a very important mechanism to sustain rainfall. The word loss stems from the perspective of the water user who thinks water is wasted for his purpose, and even then it is only from the perspective of the narrow-minded water user, who does not recognise the larger scale processes. So please remove or replace the word loss throughout the paper.

Your first sentence of the Introduction could sound: Interception of rainwater accounts for the amount of rainfall intercepted by the canopy, which is evaporated during rainfall events or after rainfall ceased.

2. Rainfall, evaporation, discharge etc. are fluxes, not stocks. The correct unit is in L/T (mm/d or m/s or whatever, as long as it is a length or volume per unit of time). In some cases we can use the integral over time of this flux, resulting in a depth, but even then it only has significance if we mention the period over which it was integrated. A rainfall of 100 mm has significance only if we mention the period over which the rainwater was accumulated. Obvious, but often sinned against. Please correct the units on page 2716 lines 10 and 11 into mm/a. In the vertical axis of Figure 1, I guess you mean mm/month. Please correct.

3. In the journal HESS we want to avoid parameters of more than one symbol. TF could mean T times F. Please use T (with a subscript if need be). Also do not use SF (in Table 2).

4. I guess on page 2710 line 25 you mean "Palma verdadeira" instead of Pama ver-

dadeira.

5. page 2711 line 17. an accuracy of 0.1 inch means an accuracy of at most 0.25 mm and not 0.254. There is no way this tipping bucket has an accuracy up to 0.001 mm. In a scientific publication it is not acceptable to suggest a higher accuracy than what you have.

6. If on page 2716 line 22 you mention that within 100 km of your site the same throughfall was measured, then what is new about your research?

7. On page 2719 line 14: differ instead of differs

Congratulations on an interesting paper

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