

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 details of canopy interception are not well understood, and canopy interception in tropical environments has been particularly problematic to model. Research is thus sorely needed to refine understanding of this important process, and this paper presents interesting new data that are analyzed in imaginative ways to shed some important light on how spatial variability affects canopy interception. Nonetheless, there are some points that I think could improve the paper.

What are the implications of using the median throughfall per collector as the estimate of total throughfall? It is hard not to think that this decision was made to help reduce the

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number and magnitude of events with $TF > 100\%$ instead of simply because TF was not normally distributed (P2712 L20). The high variability of %TF in high-intensity rain led the authors conclude (P2722 L6) it is not possible to estimate interception loss from median throughfall when intensity is high. Instead, they advocate using a weighted mean of throughfall according to some initial estimate of pattern.

I see two issues with this paired method and conclusion. First, lacking some testing and analysis of the properties of the median and the mean, the conclusion is not warranted. Such an analysis would need to address the meaning of median in terms of collector size and water balance of a plot or watershed. Second, and most importantly, the high spatial variability during some times of the year and during high-intensity rainfall was apparently not sufficiently sampled to robustly estimate the mean. Given that traditional averaging is equivalent to weighted averaging with all weights equal, and given that there is no way to estimate spatial pattern necessary for assigning other weights without intensive sampling with a large number of collectors, the simplest conclusion is that more collectors are needed.

Are the values presented in Fig 2 correct? For example, did the throughfall in collector 14 really average about 6 standard deviations greater than the mean? If these values are correct, I think the confidence intervals of the mean (median) throughfall for each storm would be so large as to make it clear that 20 collectors simply were not enough.

Regardless of insufficient throughfall gauges for robust estimation of canopy interception losses, this paper contributes greatly to the literature of canopy interception processes with some novel analyses and intriguing findings regarding the interactions between canopy morphology, rainfall characteristics, and spatial variability of throughfall.

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