

Interactive comment on “Properties of dissolved and total organic matter in throughfall, stemflow and forest floor leachate of Central European forests” by S. Bischoff et al.

Anonymous Referee #2

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This paper investigates the organic compounds in different precipitation components, with a particular focus on the difference of the structure of organic matter in the dissolved (<45 μm) and colloidal fractions. It also discusses potential influences of organic matter composition in forest water fluxes for the ecosystem, for example with regard to inhibition of other plants or fungi. This paper is of interest for the readers of “Biogeosciences”. There are so far few investigations of the properties of particulate matter in the net precipitation, and this paper is therefore a valuable contribution to the literature.

I am not an expert in the analysis of carbon compounds and can therefore not

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comment on the sample preparation and analysis presented, as did the other reviewer. I base my review rather on the overall contribution of the paper to the study of net precipitation components. As such, the paper is well structured (given some smaller issues as stated below), the design of the experiment is well explained, and the presented analysis are convincing. I have only some minor comments, which may further improve this paper.

General comments

GC 1 I would have appreciated a list of abbreviations to help navigating the text, such as BP, FF; ALB, TF, HAI etc.

GC 2 P 15090/L07-16 contain interesting hypotheses and I implicitly assumed they would be re-visited in the discussion or conclusion, but there they are not addressed explicitly. Can you extend on these?

GC 3 In Fig. 1 - Please add a line, marking zero, to the graph of the differences between filtered and unfiltered samples. It is difficult to make out where the difference is positive or negative.

GC 4 Fig 1, Table 2: The first lines in Section 3.2 say that differences in DOM and TOM diminished from TF to SF and FF. I understood this as implying an order, that is $\text{TF} > \text{SF} > \text{FF}$, and refers again to the differences in filtered and unfiltered samples shown in Fig. 1 and Table 2? The following sentences and also the first paragraph in the conclusions seem to further develop this suggestion. But in Fig 1 and also Table 2 the (absolute) differences between filtered and unfiltered samples seem to go in a different order: $\text{TF} > \text{FF} > \text{SF}$. This needs to be clarified.

GC 5 Results vs. discussion: Much of section 3.1 reads like a results section, while 3.2 reads like a discussion section. In 3.1 some literature is cited for comparison, i.e. whether the observed differences were to the same direction in other studies, but there is no discussion of the potential mechanisms. Only one paragraph includes discussion on mechanisms, but only for a particular item (P 15095 L7-20), that is the possibly influence of insect infestation on the results.

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I propose transforming section 3.1 into a results section (while I think it is ok to keep the references to the literature for comparing the measurements) and section 3.2 into an interpretation section (or simply “discussion”). For this, move the paragraph P 15095 L7-20 into (now) section 3.2. If you go with this suggestion, mechanisms would only be discussed in section 3.2 and the heading could be adjusted accordingly to help orientation for the reader. The current name of section 3.2 is misleading as “differences in structural C composition” are also a topic in section 3.1.

Detailed comments

DC 1 P15089-L13: Sentence should start better with “Although”

DC 2 P15089-L26: Better “Previous work” or “Previous studies”

DC 3 P15089-L26-28: I find this sentence far fetched to motivate the need to study the influence of tree species on properties of DOM. In fact it would read better if the sentence was erased.

DC 4 P 15094-L3: I believe it is meant “were being” instead of “were be” or simply erase “be” .

Interactive comment on Biogeosciences Discuss., 11, 15087, 2014.