

Interactive comment on “Sources and transfer mechanisms of dissolved organic matter during storm and inter-storm conditions in a lowland headwater catchment: constraints from high-frequency molecular data” by L. Jeanneau et al.

L. Jeanneau et al.

laurent.jeanneau@univ-rennes1.fr

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Thank you for your contribution to improve this paper and for your remarks. I agree with your comment when you indicate “I am not sure that the authors have the evidence to back up some of these explanations.”, some of them, and more specifically, the erosion of macropore walls are hypothetic and it is clear that alternate explanations can be formulated. You suggest the destabilization and disaggregation of soil aggregates

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during storms, which is a physical process that could have similar results to the erosion, that is to say, to introduce soil particles in the water flowing through the macropores. As a consequence this complementary process will be added to the discussion. You also suggest the microbial lysis in the soils over the dry period and the flushing of those microbial compounds during the wetting-up phase in order to explain the increase in the proportion of microbial compounds at the beginning of each storm events. However at the time of the investigated period (from the 4/12/2010 to the 19/02/2011), the recharge has already occurred and the wetland soils have been saturated for twenty days. As a consequence the microbial byproducts accumulated during the dry period have already been flushed. This point will be discussed in order to clarify it.

Response to specific comments:

P 3359, line 1: Since no internal standards were used, it is not possible to calculate know what proportion of DOM do the analyzed markers represent. However the compositional proxies on lignins and carbohydrates can be interpreted in a qualitative way. As a consequence the approach is not weakened but it is not possible to provide quantitative information from a qualitative analyses. As an example, it is not possible to quantify the proportion of flushing and the proportion of partitioning using those data. To perform such a calculation, quantitative data are necessary.

P 3359, line 17: Rumpel, C. and Dignac, M.-F.: Gas chromatographic analysis of monosaccharides in a forest soil profile: Analysis by gas chromatography after trifluoroacetic acid hydrolysis and reduction–acetylation, *Soil Biol. Biochem.*, 38(6), 1478–1481, 2006. This reference will be added in the text.

P3367, lines 5 and 6: That is true; the term evidence is misused and will be replaced by suggested.

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