

Interactive comment on “Multidecadal persistence of organic matter in soils: investigations at the submicrometer scale” by Suzanne Lutfalla et al.

Suzanne Lutfalla et al.

suzanne.lutfalla@gmail.com

Received and published: 26 October 2018

We thank the reviewer for his positive general comment on our draft. Regarding his/her specific comment, elemental analysis gives the C:N ratio of bulk SOM associated to the different clay fractions. We observed very substantial decreases of C:N ratios with time under bare fallow for bulk SOM associated to clays, C:N ratios reaching particularly low values (C:N below 5). We therefore concluded that persistent SOM in clay fractions is N-rich and we do not see which alternative explanation we can suggest. We agree that information based on the N K-edge stacks would have been interesting and useful. Unfortunately, as reported in the draft, for reasons we do not understand, we could not identify peaks in the N-edge region of the NEXAFS spectra. Besides, we are not aware of any study having successfully identified peaks in this region on natural SOM.

C1

We fully agree that it would need further research beyond the present study.

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2018-343>, 2018.

C2