

Review of BG-2016-317 by Paul et al. (after major revision)

In the present version, the authors have done a good job in addressing the reviewers' comments and they provide enough reasoning for most of the comments from the previous review. The new figures presented in the Supplementary material (S4) help much to understand these experiments. The manuscript has been improved but I still have two comments that need some follow-up.

1. Hydrogen exchangeability – the authors equilibrated the samples with lab atmosphere for 2 hours. Is this enough? Could this statement be supported?

2. Sources of hydrogen and carbon – the definition of ‘% of C and H derived from the molecule’ in the figures and the text is confusing to me. I think the authors mean the proportion of the remaining added molecule in the soil – but this can be misunderstood with the C and H amount incorporated into soil microbial biomass. I suggest that the authors clarify this point along the manuscript.

Technical comments

Line 258 – Eqs. (6) and (7)?