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Interactive comment on "Modeling soil organic carbon dynamics in temperate forests using Yasso07" *by* Zhun Mao et al.

Anonymous Referee #2

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Mao et al. submitted an interesting manuscript about the evaluation of the Yasso07 model against RENECOFOR dataset a French network of forest plot. The paper is generally well written and the methodology sounds. It also fits well with the Biogeosciences scope. Nevertheless, the main message of the manuscript which seems to be that Yasso07 may not be the best tool to evaluate soil carbon changes in forest when it used outside the context of boreal forest where it has been originally developed is a bit diluted because the manuscript is too long. In particular, I suggest moving the sensitivity analysis in supplementary material (Fig 6 to 8). Regarding the sensitivity analysis I did not fully understood the Module II and the interest to test effect of simulation length; this should be removed or better explained.

Minor comments: P2 L3 I am not sure Yasso represents the whole state of the art.

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Discussion paper

Some mechanisms are missing and it has a humus pool whereas the humus concept is now criticized (Lehmann, J. & Kleber, M. 2015)

P6 L3-4: Are that information not available in the ICP forest network?

P8 L12-13: In the original dataset to calibrate the model is there some data coming from RENECOFOR sites?

P13 in eq. 7 the second line of the equation should be ACCsim=(CSsim,t2 – Cssim,t1)/(t2-t1), right? If not please better explained, if yes please check that this only a typo mistake and the calculation were made the good way.

Table 2: is 'ignorable' the good terms do you mean negligible?

Fig. 3: Please don't call the non-hydrolysable compounds N. It is a misleading acronym since it is more used for nitrogen.

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