

## ***Interactive comment on “Priming and substrate quality interactions in soil organic matter models” by T. Wutzler and M. Reichstein***

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We thank B. Guenet for his encouraging comments

A revised version is provided with the final response.

(1) B. Guenet noted that the subject and importance of priming needs to be explained in more detail.

In the revised version we extended the first part of the introduction and cited more papers on the priming effect besides the most recent ones. In addition the corresponding paragraphs 1.1.1 and the discussion section on priming have been extended.

(2) and (3) B. Guenet noted that citations of experimental studies would be useful to

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judge if presented simulations are reasonable and that we need to justify scenarios better.

We extended Appendix B, where the simulation scenarios are described in detail and we cite experimental observations to justify our choices. In addition we slightly extended the results (e.g. L281ff ) and discussion sections (e.g. 4.5) where we explicitly compare patterns to cited studies. However, in this conceptual paper we still focus on comparisons among models and keep comparison to experimental results limited.

(4) Required graph on microbial biomass dynamics:

A graph of microbial biomass of the simulations of Fig3 is provided with supplementary material PrimingMic.pdf, and reference in the text: Respiration closely follows active microbial biomass (see electronic supplement PrimingMic.pdf). In the other scenarios the microbial dynamics is not really interesting, as Microbial population is always near its steady state.

(5) Need of more details and derivation on equations.

We provide an updated appendix A that details the derivation of the equations much better now.

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