

## ***Interactive comment on “The importance of management information and soil moisture representation for simulating tillage effects on N<sub>2</sub>O emissions in LPJmL5.0-tillage” by Femke Lutz et al.***

### **Anonymous Referee #2**

Received and published: 31 March 2020

Lutz and co-authors validated a model that estimates soil N<sub>2</sub>O emissions in tillage and not tillage agriculture against field experiments. They report that (1) the model performance is improved by using including site-specific land use information as a model input instead of global model estimates and that (2) the model performance bias (overestimation of emissions) is reduced by a better parametrisation of hydrological processes (to avoid an overestimation of soil moisture).

This is a well structured manuscript that makes important contributions to the incremental improvement of the LPJmL5.0-tillage model. The manuscript is well structured

C1

and easy to read. Overall, I find the author work convincing and have only minor comments:

- I recommend removing the grey background and grid from the plots to improve the figures readability. - General discussion and conclusion sections are almost of the same length and largely redundant.

---

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2019-364>, 2020.

C2