AR1

Simplifying Equation 7, well, the community commenter and I did not like the idea of neglecting the liquid phase concentration here. The reason is that the emissions of Ammonia occurs as a consequence of the liquid phase concentration of NH4 (Henries law...). And also the crop uptake of ammonium occurs via the liquid phase NH4. I understand that mathematically this is a small fraction of the total ammonium in the soil. However, it is the relevant fraction. Of course you can publish both options, but I think in the soil science community this simplification will not be accepted.

I think our previous responses misunderstood the critique in this section, we are not neglecting the aqueous phase concentration, which is the quantity that is calculated using equations 7 – 13. The simplified approach is merely a numerical approximation for equations 10 - 11 which results in a typical approximation error of <1.5% in the value of the aqueous phase concentration. We have edited lines 218 and 222 to clarify our intention.

'number of parameters' I hope this does not sound too picky. The freundlich and Langmuir equations both have two parameters. No matter how one of the parameters was derived. Mathematically they have two parameters and even in table 1 the units of two parameters are given for freundlich and Langmuir...

Table 2, Table 3 and Table A2 have been edited to remove the column indicating the number of parameters. (Note that Microsoft word's track changes function does not track the removal of columns from tables).

Other changes:

Several minor typographical and grammar changes have been made, highlighted in track changes.