

Interactive comment on “Investigating uptake of N₂O in agricultural soils using a high-precision dynamic chamber method” by N. J. Cowan et al.

N. J. Cowan et al.

nickcowanuk@gmail.com

Received and published: 20 October 2014

We thank the reviewer for the constructive comments on our manuscript.

In response to the General comments:

Referring to Hensen et al. (2006): This reference will be added for completeness, although it is referred to indirectly via the recently published paper which describes our methodology (Cowan et al. 2014: An improved method for measuring soil N₂O fluxes using a quantum cascade laser with a dynamic chamber, European Journal of Soil Science). This paper contains the more details of the methodology, which we don't repeat here for brevity.

C3275

In response to the Specific comments:

p 8129 first paragraph & P 8130 lines 9-10:: The methodology paper referred to above includes the full details of the methodology (e.g. manner of lid and chamber placement, soil extraction methods), and we feel these do not need repeating here.

P 8129 lines 13-16: We agree that removing the word “initial” and changing the symbol dt_0 to dt in Equation 1 would make this section clearer.

P 8132 lines 10 -15: In further work, we have found correlations with soil nitrogen content (in the form of ammonium and nitrate) and N₂O flux using similar measurement methodology, and we think this comparison is still useful. We agree it is useful to mention the findings of (Neftel et al. JGR 2000) and report it in the discussion section.

P 8133 lines 10 -15: We don't see the mismatch referred to. The fluxes show a lognormal distribution, so there is no particular expectation about the proportion of fluxes that will be negative.

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 8125, 2014.

C3276