

***Interactive comment on* “Evaluation of a lower-powered analyser and sampling system for eddy-covariance measurements of nitrous oxide fluxes” by Shannon E. Brown et al.**

Shannon E. Brown et al.

sbrown06@uoguelph.ca

Received and published: 2 December 2017

Technical corrections from Reviewer 1 were addressed as follows and were incorporated in the current version of the discussion paper:

Lines 9 and 17. Avoid acronyms in the abstract such as EC and TDLAS.

Removed acronyms EC and TDLAS from the abstract, replaced with eddy-covariance or tunable diode laser absorption spectrometer.

Line 31. High r-square values do not tell us about the fluxes being similar; i.e. the slope or means could be quite different. Can you give an additional statistic to tell us

Printer-friendly version

Discussion paper



how close the comparison was (e.g., regression slope or

Included the regression slopes (p1, l24; p1 l26)

Line 46. The word “significant” is not quite right here; perhaps you mean a sufficient spatial sample?

Removed “significant”, changed sentence to “This sporadic nature of F_{N_2O} necessitates continuous measurements covering areas large enough to capture the spatial heterogeneity of the fluxes to sufficiently quantify total emissions from agricultural systems”

Line 48. So if we remove the acronyms in the Abstract, define “EC” here.

Defined EC at line 9 page 2.

Line 90. Some references here, such as Wagner-Riddle 2017 reported on flux-gradient measurements, yet this discussion is about EC.

Removed the reference (p2, l13)

Line 306. Velocity instead of speed for “w”.

Changed speed to velocity (p8, l25)

Line 374. Perhaps “freezing” instead of “zero” so that the temperature units don’t matter?

Changed zero to freezing (p10, l22)

Line 459. Were the coefficients the same for the TE and LN comparisons, or is this a typo? If they were identical, perhaps reword.

Clarified that the comparisons were between TLDAS-TE and EC-155, and TDLAS-LN and EC-155 (p12, l24-26)

Line 474. This paragraph is about EC measurements of N_2O but the 2 references are

Printer-friendly version

Discussion paper



more about CO₂. Are they appropriate?

Clarified that the data coverage refers to the data captured after standard EC-filtering for wind speeds and direction, which applies to both CO₂ and H₂O EC fluxes (p13 l6)

Figure 4. Units should be given for frequency on x-axis.

Added units.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2017-169, 2017.

Printer-friendly version

Discussion paper

