

## ***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

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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

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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  $F_{N2O}$  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

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more about CO<sub>2</sub>. 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 CO<sub>2</sub> and H<sub>2</sub>O EC fluxes (p13 l6)*

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

*Added units.*

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