

Interactive comment on “Measurement and modelling ozone fluxes over a cut and fertilized grassland” by R. Mészáros et al.

Anonymous Referee #1

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This is an interesting study on measurements and estimation of ozone fluxes over grassland. The main advantage of this MS is that authors present measurements, and using these results, they could model the ozone deposition velocity and improve the algorithm based on field measurements.

I recommend this MS for publication after the authors have considered the following points:

Major point:

Authors describe the effect of fertilization via NO fluxes into the atmosphere. This presentation is not clear and should be rewritten and restructured. The flux can be calculated as a product of the concentration of the trace gas and the deposition velocity.

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It is clear that NO flux may affect the ozone concentration at a given reference height due to reactions. However, it is not clear why the NO flux may affect the ozone deposition velocity? ('The ozone deposition velocity however seemed to slightly decreased immediately following fertilization, instead of increasing as would be expected if an NO flux occurred (as NO would consume O₃)').

Minor points:

(i) Fig 1: The soil water content has an interesting behavior; it seems to me that the precipitation does not affect the soil water content. As far as I know there is a strong correlation between two quantities. This should be discussed in the text or at least in the figure caption.

(ii) Fig 2 should be structured, for visibility reason asterisks, axes, symbols should be enlarged. Please also include periods (first, second, etc.) on subfigures, this will help to understand the content of the MS for readers.

(iii) Page 1072; Eq (1): Unit of variable 'a' should be the same as for other variables in equation because of ppb.

Interactive comment on Biogeosciences Discuss., 6, 1069, 2009.

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