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Interactive comment on “Soil-atmosphere exchange of ammonia in a non-fertilized grassland: measured emission potentials and inferred fluxes” by G. R. Wentworth et al.

G. R. Wentworth et al.

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Author Response: We are very thankful for this suggestion and agree that the use of mixed-layer theory (MLT) has great applicability in surface-atmosphere exchange studies. However, our data set for this particular study is lacking NH₃ measurements in the free troposphere so it would be hard to accurately parameterize the entrainment flux. Furthermore, there was very little gas-phase HNO₃ (< 0.5 ppb) during our study so we would anticipate the chemistry term in the conservation equation to be small. Therefore, due to a lack of measurements to allow adequate parameterization of key elements of the proposed conservation equation, we suggest that this analysis is out-

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side the scope of this current study. However, we are preparing a manuscript of a field study where concurrent aircraft measurements are available, and are very interested in incorporating this MLT model into our analysis.

Interactive comment on Biogeosciences Discuss., 11, 7541, 2014.

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