

Interactive comment on “Dynamics of ammonia exchange with cut grassland: strategy and implementation of the GRAMINAE Integrated Experiment” by M. A. Sutton et al.

Anonymous Referee #1

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GENERAL COMMENTS This is an unusual paper to review, in the sense that the article consists mainly of the rationale, site description and methods for the whole GRAMINAE Braunschweig experiment, but no results. Section 5 "Results" is a misnomer because the headers "Synoptic meteorology", "Environmental conditions", "Air Chemistry" and "Pland and Soil Conditions", hardly describe the dynamics of ammonia exchange with cut grassland. They are at best background information useful for interpreting the actual scientific results, which will be found in the 16 other papers of the special issue.

It is therefore difficult to judge from this introductory paper whether the objectives were met, whether the methods employed were suitable, whether the hypotheses were con-

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firmed, etc, etc. Although scientific in nature, the paper cannot be assessed using the usual criteria for scientific papers.

Nonetheless, this is a useful piece of work, which brings together in one place relevant information for all papers of the special issue and avoids endless and unnecessary repetitions. The authors provide the context in which the experiment was designed, planned and implemented, with emphases on various scientific questions to be answered and objectives to be attained in the papers of the special issue. Thus the MS is a key paper giving coherence to the special issue, as will be and do the synthesis and conclusion paper by the same leading author and others, and needs to be published.

SUGGESTIONS FOR IMPROVEMENT

The paper is too long (>50 pages) and should be shortened by 20-25%. I would suggest for example to merge the overviews of Fig.1 and Fig.13, which are essentially identical. All is required is for the Paper names of Fig.13 to be added below or next to the relevant issue addressed in Fig.1. I understand that Fig.13 could be seen originally by the authors as some kind of "result" of the strategy and implementation paper, but it feels and looks like a repetition, and it would help the reader to have an overview of all papers of the special issue upfront, at the start of this paper. Likewise, Fig.7 and Fig.8 could be merged into one single figure, as they both describe meteorology and micrometeorology over 3-4 weeks. The daily maximum and minimum T of Fig.7 can be removed as Fig.8 contains all diurnal temperature data. Windspeed and friction velocity can be combined into one graph; daily sunshine hours is not really needed if global radiation is provided; etc.. A single figure with 4-5 stacked graphs would be ideal. I am not sure it is essential to show meteorological data for the period prior to the experiment (01-May to 22-May), as is currently done in Fig.7 .

Further reductions in length could be obtained by: - deleting Table 3; this is perhaps only truly relevant to the aerosol papers and could be mentioned there - keeping the emphasis on the measurements and modeling done before the experiment (Fig.2 and

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3), which justify the logic of the experimental design and strategy, but toning down the "Results", some of which do not really add any significance to the paper, eg Fig. 10 and 11, which could easily be removed.

A "Results" section is actually not really necessary, for reasons exposed above. The paper could easily move from "4- Field site and measurements strategy" directly onto "5-Discussion and Conclusions". The key figures (overview of meteorology, merged Figs 7-8; overview of atmospheric concentrations Fig 9; and overview of soil parameters Fig 12) are needed and could be described as part of the Site Description, in a section called "Environmental conditions during the experiment".

This would help streamline the paper, and do away with the illusion that some significant results are presented here, which they are not. The paper would thereby gain in legibility and conciseness.

Interactive comment on Biogeosciences Discuss., 5, 3347, 2008.

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