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## ***Interactive comment on “N<sub>2</sub>O emission from organic barley cultivation as affected by green manure management” by S. Nadeem et al.***

### **Anonymous Referee #3**

Received and published: 12 April 2012

#### General Comments:

The paper addresses timely issues related to the environmental impacts of organic vs. conventional crop production systems and should be of interest to readers of the journal. The introduction is informative and for the most part the methods are well described. The results are interesting and comparing emissions in the context of greenhouse gas intensity provides useful information. I think the biggest limitations to the paper are gaps in sampling during the spring season and low sampling frequency (1 to 2 times per week during the growing season). The authors are aware of these limitations and it is debatable the extent to which these reduce confidence in some of the conclusions. Estimates of cumulative fluxes are the most suspect. On the other hand, measurements of yields, soil mineral N, and daily N<sub>2</sub>O fluxes are likely to be more

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reliable. I recommend that the authors make clear in the abstract that estimates of cumulative emissions are uncertain. Unfortunately, this means that estimates of GHG intensity are also uncertain. I recommend publication if the authors can make a convincing case that despite the limitations, the paper advances our understanding of the processes that control N<sub>2</sub>O emissions, crop yields, and soil N and water dynamics.

#### Specific Comments:

Line 25: cite a more recent reference.

The figure captions state that standard deviations are omitted to increase clarity but I would like to see some quantification of standard deviations at the daily scale stated.

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Interactive comment on Biogeosciences Discuss., 9, 2307, 2012.

**BGD**

9, C645–C646, 2012

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