

Interactive comment on “Seasonal trends of dry and bulk concentration of nitrogen compounds over a rain forest in Ghana” by F. Fattore et al.

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General comments

Authors: In relation to the first general comment of the referee 2, we can explain our choice of limiting this paper to the atmospheric dataset. We are indeed interested to investigate and present two levels of information: 1. To analyse the variability of atmospheric concentrations and relate them to possible sources, 2. To determine the magnitude of the deposition fluxes over the Ankasa forest. We however decided to separate the presentation and discussion of these two topics into two different papers. This is due first of all to the big amount of data, tables, figures and the articulate discussion needed to present both topics completely and extensively, which would make one paper too long. The present paper is already very reach in table and figures, which we

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consider all very useful to have a full discussion based on detailed evidence. We are confident that data presented will be of value for many researchers interested in this tropical area. Second, the evaluation of the deposition fluxes is less easy than it seems because the experience of N deposition flux modeling in tropical rain forests is limited and models are mostly based on data developed elsewhere. So in order to have more robust conclusions we have decided to use an ensemble of inferential models based on different principles and we will focus the second paper on the application of the modeling ensemble, discussion of model differences and estimates of average fluxes based on statistical considerations. We think this is necessary given the wide uncertainty associated to the estimate of the flux using one single model. We hence think that to discuss both paper properly they should be given the necessary space. We are however also working on the modeling side with the final goal to provide N deposition estimates in our site, also necessary to make consideration on other ecosystem investigated endpoints.

R 2 : It would have been interesting to make some remarks concerning estimated emissions of NO from soil, relative to the N from biomass burning, the NO from soil might well be a significant source of N-compounds over the forest.

Authors: We agree with the referee that NO soil emission could be a N source at the site and this will be better underlined in the paper in its revised version also citing the few data available on NO fluxes from similar ecosystems. However not having direct measurements we can only limit our discussion to some hypotheses.

R2: And finally, some remarks might be made concerning the use of chemical transport models. These experimental data will be very useful for these models to be used for model evaluation

Authors: We agree with the referee comment and we also think that the whole dataset might be of significant use to validate chemical transport models in the region. Some reference to this topic will be added in a sentence in the introduction.

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