

## ***Interactive comment on “Integrated method for the measurement of trace atmospheric bases” by D. Key et al.***

**D. Key et al.**

m.baum@oak-crest.org

Received and published: 6 December 2011

Please see attached document.

Interactive comment on Atmos. Meas. Tech. Discuss., 4, 6007, 2011.

C2305

### **Anonymous Referee #1**

*“This manuscript describes a measurement method for trace atmospheric nitrogenous bases present in the gas phase. Although the method is novel and relevant, the manuscript requires substantial revisions. My major comments are as follows:*

*1. The manuscript is poorly organized and difficult to read. I recommend the reorganization and shortening of the main manuscript and moving some of the results to the supplemental material. At present, the main manuscript is concerned mostly with derivatization and analysis of standard, off-shelf compounds, whereas the actual atmospheric measurements are only briefly mentioned at the end of the manuscript. In my opinion, this should be reorganized – most of the material describing the optimization of the derivatization methods should be consolidated and moved to the supplemental material, whereas the actual ambient and motor vehicle exhaust measurements should be more emphasized in the main manuscript. After all, the title of the manuscript implies measurements of real world atmospheric species.”*

The revised manuscript has been completely reorganized to specifically address these comments, as well as those from Referee #2, using the structure proposed by the Editor.

*“2. The experimental part contains only the description of derivatization and analysis of standard amines and activated primary amines, and the reader is kept in the dark until the last section of the manuscript (3.6) how to perform the real world atmospheric measurements. A lot of the material presented in the Result and Discussion section (section 3) should be actually in the Experimental section and in the supplemental material. The authors need to ask themselves which important points they want to make and reorganize the manuscript accordingly. At present, the manuscript seems to be more of a report of many observations with a little sense of what is the most important here. The style of the manuscript seems to reflect a project final report, but is not appropriate for a research paper.”*

We appreciate the constructive comments and have taken them into account when reorganizing the manuscript. We also have edited it further with the stylistic recommendations in mind.

*“3. I would also suggest that some thought be given as to how to avoid tedious descriptions of many derivatization experiments in the Result and discussion section and present them in a condensed form in a table, perhaps in the supplemental material.”*

While it is true that the description of the derivatization experiments does not constitute the most exciting reading material to most people, it is required to support our claim that the methods have been fully validated and optimized to make them as user-friendly and reproducible as possible. We have added flowcharts describing the optimized procedures (Fig. 3 & 5) in the revised manuscript.

*“4. The results of ambient and motor vehicle exhaust measurements (section 3.6) should be presented in a table, not in the text.”*

A table (Table 5) has been added in the revised manuscript.

*“In summary, the manuscript presents interesting material that justifies publication, but the way of presenting this material needs to be improved.”*

**Fig. 1.**

C2306