

## ***Interactive comment on “Field inter-comparison of eleven atmospheric ammonia measurement techniques” by K. von Bobrutzki et al.***

**Anonymous Referee #1**

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The paper describes the results of a large field intercomparison of NH<sub>3</sub> concentration measurements. Reliable measurements of ambient NH<sub>3</sub> concentration are still a challenge and are not yet on an operational level. Nevertheless there is growing need to monitor ambient NH<sub>3</sub> concentration or even more ambitious NH<sub>3</sub> exchange fluxes. Eleven different systems participated in the intercomparison in Scotland. Such experiments are important and part of the needed development towards operational systems. The paper gives a good overview on the performance of the systems and present a simple and clear analysis, nothing spectacular but useful. An important message is that time resolutions are generally worse than indicated by the manufacturer. To me this points to the stickiness of NH<sub>3</sub> molecules on surfaces. The dataset certainly would allow a more profound investigation. Exemplarily: how are reacting the different systems to rapid changes in the atmospheric concentration; is there any dependence

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on the relative humidity? Describing the quality of the systems with correlation coefficient to a synthetic NH<sub>3</sub> that itself is derived from the measurements is likely to give a rather good looking result and small, but systematic differences are easily overlooked. Such differences might play an important role in case such systems are used for flux measurements in a gradient configuration.

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