Atmos. Meas. Tech. Discuss., 2, C385–C386, 2009
www.atmos-meas-tech-discuss.net/2/C385/2009/

Atmospheric Measurement Techniques Discussions

Interactive comment on "A laboratory flow reactor with gas particle separation and on-line MS/MS for product identification in atmospherically important reactions" *by* J. F. Bennett et al.

Anonymous Referee #1

Received and published: 14 July 2009

The paper presented by Bennett provides experimental detail on, and evidence for, the performance of a flow reactor system to study organic atmospheric reactions. The paper draws a number of themes together, relating to the selective exclusion of either gases or aerosols from the outflowing sample stream, a methodology for the identification of products formed using MS/MS, and a test system oxidising m-xylene.

The authors have produced a very carefully written manuscript that sets out clearly to the reader the essential components of the experimental system in a way that would allow the experiments to be fully recreated elsewhere. This is to be applauded, since regrettably this is not always the case in publications. The manuscript is well balanced

in terms of material and has been carefully checked for errors – I found nothing significant in this regard. The graphs tables and figures all appeared appropriate to the manuscript.

My concern with the paper is however the extent to which it advances the state of the art in this field. Numerous denuder techniques have been proposed in the literature for both static and flow reactors, and indeed as inlets for ambient instruments measuring VOCs and particles. The data presented here is very compelling that this particular denuder works well, but its perhaps questionable whether this really is a substantial step forward. It may well be, but the advances in this element of the experimental system over what has gone before are not are made clear. Similarly the use of tandem MS as a means for analyte identification are also not new, and perhaps now seem even slightly out of date given the ever increasing accessibility of high mass accuracy ToF detectors.

This is therefore a very difficult paper to make a judgement on. It is a discrete piece of careful experimental work, well reported in an easy to read and concise document. But as it stands it doesn't sell the case to this reviewer that this is really a new piece of research that stands out from what has gone before - rather it is an excellent technical summary of a particular experimental rig in a single laboratory. This is clearly going to be difficult editorial territory for a new journal such as AMT, where there will naturally be a much higher tendency for manuscripts of this kind. There is great value in having work such as this reviewed and in the public domain but it is not clear that this falls within the AMT remit.

Interactive comment on Atmos. Meas. Tech. Discuss., 2, 1351, 2009.