Atmos. Meas. Tech. Discuss., 2, C1168–C1169, 2010
www.atmos-meas-tech-discuss.net/2/C1168/2010/

Atmospheric Measurement Techniques Discussions

Interactive comment on "Elemental analysis of aerosol organic nitrates with electron ionization high-resolution mass spectrometry" *by* A. W. Rollins et al.

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Received and published: 26 January 2010

We thank the reviewer for these comments and suggestions which have helped us to clarify this paper. Responses to specific points are as follows:

We understand the reviewer's first comment to suggest that we should explain why the synthetic organic nitrates used in this study are good proxies for atmospheric aerosol, and why these molecules should be expected to elicit a similar AMS response to those typically generated in the atmosphere allowing us to apply our lab results to interpret ambient AMS data. In response, beta-hydroxynitrates are formed in significant quanti-

ties in the atmosphere. These molecules are formed by the oxidation of alkenes in the presence of NOx and are perhaps the most common chemical form of organic nitrate found in the atmosphere. Beta-hydroxynitrates are expected to contribute to, and have been observed in ambient aerosol. For this reason we think that the proxy molecules we chose for the experiment should yield similar AMS responses to organic nitrates occurring in atmospheric aerosols. We will add text to the introduction explaining this and why we believe it is reasonable to use our result to interpret the ambient AMS data.

We will rewrite some of the text in section 5 to more clearly describe the derivation of equation 1 in more detail. Based on the comments from both reviewers we will add a table which lists all of the various conversion factors used in section 5, and the sources of these numbers.

Interactive comment on Atmos. Meas. Tech. Discuss., 2, 2781, 2009.