

Interactive
Comment

Interactive comment on “An assessment of the performance of the Monitor for AeRosols and GAses in ambient air (MARGA): a semi-continuous method for soluble compounds” by I. C. Rumsey et al.

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Received and published: 9 December 2013

Response: To provide a wider discussion of the N₂O₅ artifact, we have now added further information to the manuscript on the Phillips et al. (2013) study. We have also now added information that states that the magnitude of the artifact varies geographically due to atmospheric chemical and physical factors, and have clarified that for this particular study, the magnitude of the artifact is likely small. The information added to the manuscript on the N₂O₅ artifact is now as follows:

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Interactive Discussion

Discussion Paper



“It is acknowledged that both the Na₂CO₃ denuder and the WRD are sensitive to measuring dinitrogen pentoxide (N₂O₅) as NO₃⁻ during the nighttime (Phillips et al., 2013). However, since both sampling techniques are likely influenced in a similar way, it will not affect the comparison between the Na₂CO₃ denuder and the WRD. This artifact may influence measured concentration levels. Phillips et al. (2013) reported that on average N₂O₅ contributed 17% of MARGA measured nighttime HNO₃ at a sampling site near Frankfurt, Germany. The magnitude of N₂O₅ concentration varies in different geographic locations and is influenced by NO concentration, biogenic volatile organic compound concentrations and air temperature (Phillips et al., 2013). In this study, the influence of N₂O₅ on measured HNO₃ is likely to be small as N₂O₅ concentration levels are expected to be low due to high nitric oxide (NO) and biogenic VOC concentrations and warm air temperatures, which decrease N₂O₅ concentrations.”

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 25067, 2013.

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