Atmos. Chem. Phys. Discuss., 12, C5305–C5306, 2012
www.atmos-chem-phys-discuss.net/12/C5305/2012/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Trends in OMI NO_2 observations over the US: effects of emission control technology and the economic recession" *by* A. R. Russell et al.

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Received and published: 2 August 2012

This is very interesting work. I'm especially intrigued by your results presented in Figure 7. The increased NO2 concentrations in the northwestern United States are consistent with the spatial patterns in increased particulate nitrate concentrations (2000-2010) we reported recently (Hand et al. 2012), and to the spatial patterns in trends in nitrate in precipitation reported by Lehmann and Gay (2011). You mentioned that you did not observe a seasonal cycle in remote NO2, however we observed increasing nitrate concentrations only in December. Have you looked at trends in monthly time scales? And have you looked at a larger spatial area, to include Canada? I am curious about your

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retrieval over the Canadian oil sand area in comparison to that reported by McLinden et al (2011). Thanks.

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References: Hand et al., “Increasing trends in wintertime particulate sulfate and nitrate ion concentrations in the Great Plains of the United States (2000-2010)”, Atmospheric Environment, 55, 107-110, 2012. Lehmann and Gay, “Monitoring long-term trends of acidic wet deposition in US precipitation: results from the National Atmospheric Deposition Program”, Power Plant Chemistry, 13(7), 386-393., 2011. McLinden et al., “Air quality over the Canadian oil sands: A first assessment using satellite observations”, Geophysical Research Letters, 39, L04804, doi:10.1029/2011GL050273, 2012.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 15419, 2012.