

Interactive comment on “Trends in OMI NO₂ observations over the US: effects of emission control technology and the economic recession” by A. R. Russell et al.

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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.

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