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Interactive comment on “Inverse modeling and mapping US air quality influences of inorganic PM_{2.5} precursor emissions using the adjoint of GEOS-Chem” by D. K. Henze et al.

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I have few minor suggestions to add upon the reviewer's comments:

Line 715: The potential for enhancement of PM_{2.5} through organosulfates is one of many modes of SOA formation by their interaction with the inorganic (deliquesced) phase, and it might be nice to mention a few more. An example related to NO_x is presented by Hennigan et al. (2008, 2009) who show that water-soluble SOA formed during the deliquescence of inorganic nitrates in urban environments remain in the aerosol long after nitrates evaporate back into the gas phase.

Conclusions: I would recommend stressing even further the power of the adjoint
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method and its ability to constrain uncertain parameters beyond the emission source function.

References

Hennigan, C., Bergin, M., Russell, A., Nenes, A., and Weber, R. (2009) Gas/particle partitioning of water-soluble organic aerosol in Atlanta, *Atmos. Chem. Phys.*, 9, 3613-3628

Hennigan, C.J., Sullivan, A.P., Fountoukis, C.I., Nenes, A., Hecobian, A., Vargas, O., Case, A.T., Hanks, L., Huey, G., Lefer, B.L., and Weber, R.J. (2008) On the Volatility and Production Mechanisms of Newly Formed Nitrate and Water Soluble Organic Aerosol in Mexico City, *Atmos. Chem. Phys.*, 8, 3761-3768

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