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Supplement of

Revised treatment of wet scavenging processes dramatically improves GEOS-Chem 12.0.0 simulations of surface nitric acid, nitrate, and ammonium over the United States

Gan Luo et al.

Correspondence to: Gan Luo (gluo@albany.edu)

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Supplementary information

Table S1. Observed annual mean surface concentration of sulfate at IMPROVE and CSN sites. Annual mean surface concentrations (Mean), normalized mean bias (NMB), and correlation coefficient (r) between observed and simulated annual mean sulfate by GC12, Knew, ICCW_t, and ICCW_t_EW cases.

| | SO4 | | |
|-----------------------|----------------------------------|------------|------|
| | Mean ($\mu\text{g m}^{-3}$) | NMB (%) | r |
| Observation | 1.30 | | |
| GC12 | 1.56 | 19.6 | 0.92 |
| Knew | 1.59 | 22.6 | 0.92 |
| ICCW _t | 1.37 | 5.0 | 0.93 |
| ICCW _t _EW | 1.18 | -9.3 | 0.92 |

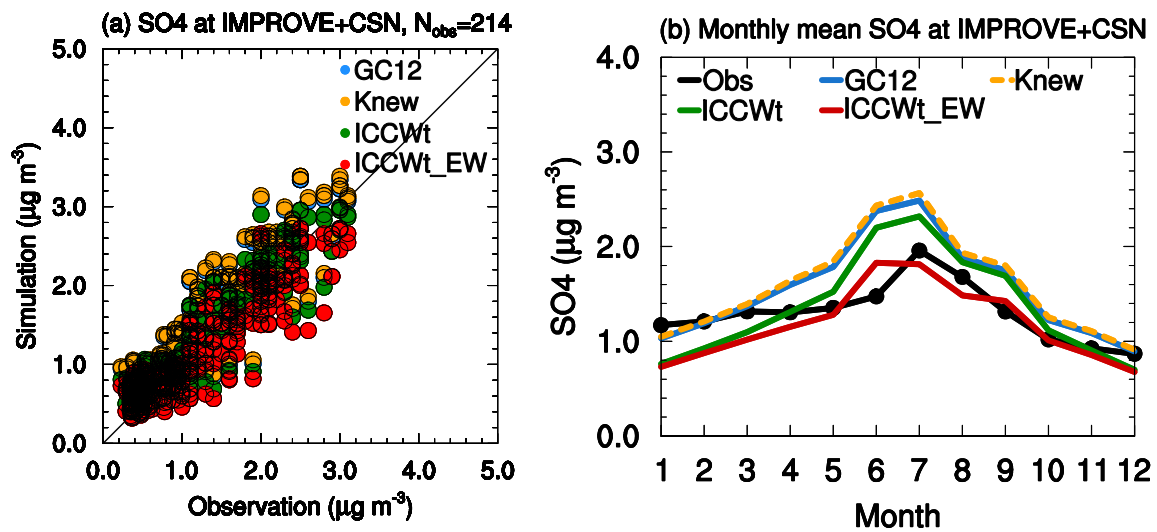


Figure S1. (a) Scatter plot of observed and simulated annual mean sulfate at IMPROVE and CSN sites and (b) variations of monthly mean for year 2011 showing the comparison between sulfate mass concentrations observed at IMPROVE and CSN sites (black) and simulated by GC12 (blue), Knew (yellow dash), ICCW_t (green), and ICCW_t_EW (red) cases.