Supporting Information for:
Underestimation of atmospheric oxidized mercury at a mountain top site by the GEOS-Chem chemical transport model

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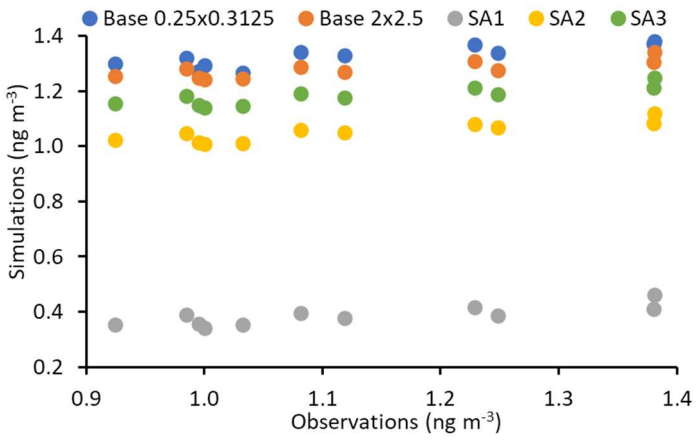

Figure S1. Observed versus simulated Hg^0.

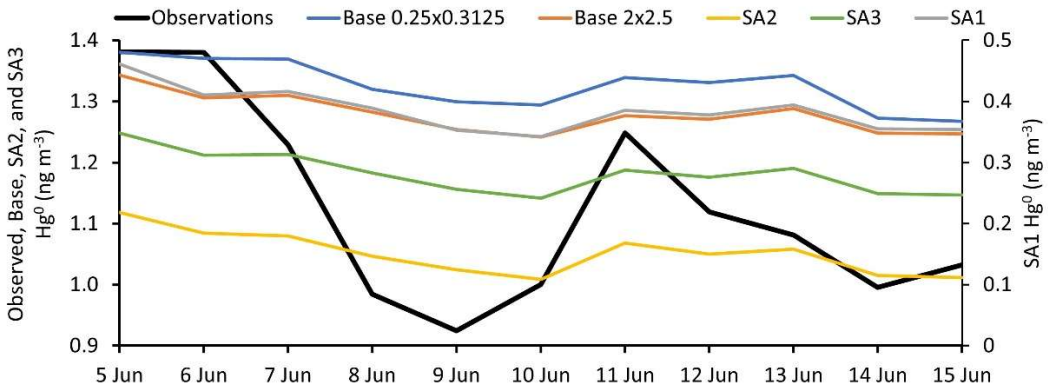

Figure S2. Observed and simulated daily average Hg^0 from 5 to 15 June 2021.

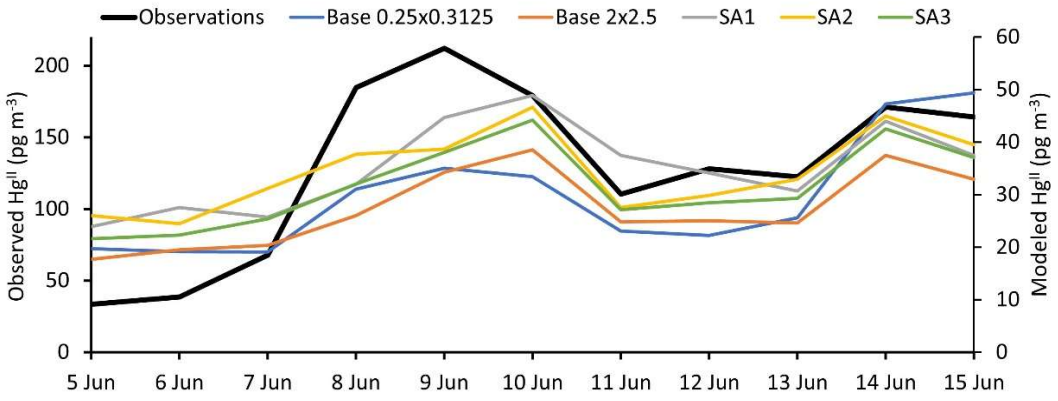

Figure S3. Observed and simulated daily average Hg^{II} from 5 to 15 June 2021.

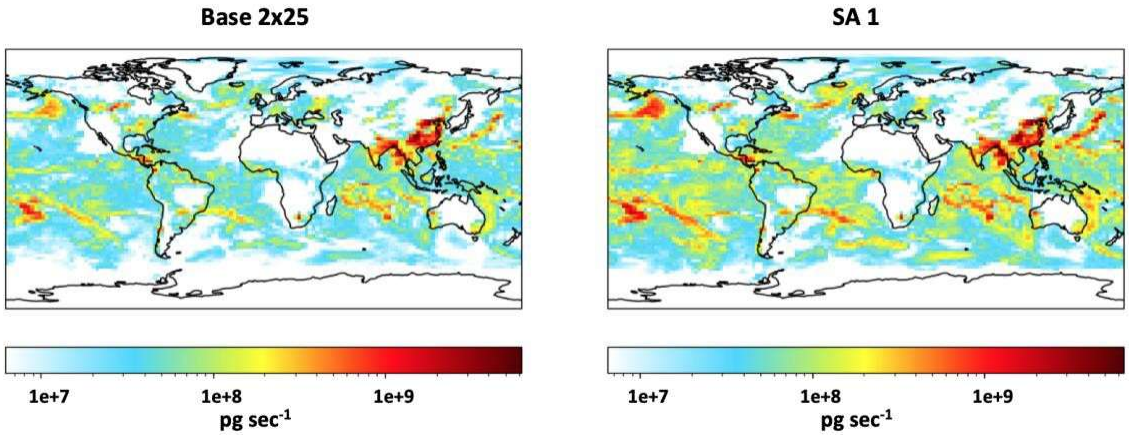

Figure S4. Average wet loss in large scale precipitation events for the Base 2x25 and SA1 simulations on 9 June 2021.

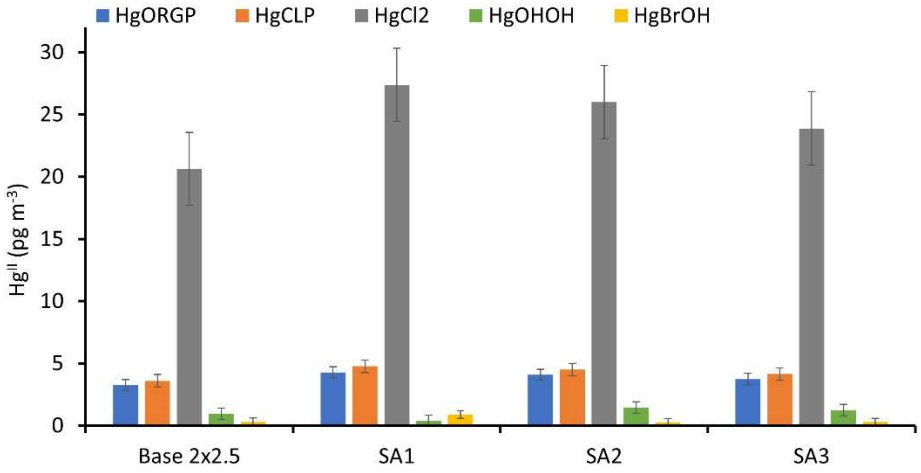

Figure S5. Dominant average modeled Hg^{II} species for the period of 7 to 11 June 2021. HgORGP represents the fraction of Hg present in organic aerosols. HgCLP represents the fraction of Hg present in chloride salts on sea-salt aerosols. Bars show averages, and whiskers show standard deviations.

Table S1. Model performance for Hg^{II} and Hg^{0} using statistics recommended by Chang and Hannah (2004). Calculations performed were the fraction of predictions within two factors of observations (FAC2), fractional mean bias (FB), geometric mean bias (MG), normalized mean square error (NMSE), and geometric variance (VG). A value of 0 for FB and NMSE represents a perfect model, larger values indicate under-prediction. A value of 1 for FAC2, MG, and VG represents a perfect model. Larger values for MG and VG indicate under-prediction.

	Simulation	FAC2	FB	MG	NMSE	VG
Hg^{II}	Base 0.25x0.3125	0.09	1.25	3.96	3.23	7.87
	Base 2x2.5	0.18	1.30	4.20	3.68	9.04
	SA1	0.18	1.14	3.22	2.52	4.78
	SA2	0.18	1.15	3.27	2.61	5.00
	SA3	0.18	1.21	3.59	2.96	6.10
Hg^{0}	Base 0.25x0.3125	1	-0.16	0.84	0.04	1.04
	Base 2x2.5	1	-0.13	0.87	0.03	1.03
	SA1	0	0.98	2.90	1.30	3.14
	SA2	1	0.07	1.06	0.02	1.01
	SA3	1	-0.05	0.94	0.01	1.02