Supplement of

Impact of Intercontinental Pollution Transport on North American Ozone Air Pollution: An HTAP Phase II Multi-model Study

Huang et al.

Correspondence to: Min Huang (mhuang10@gmu.edu)

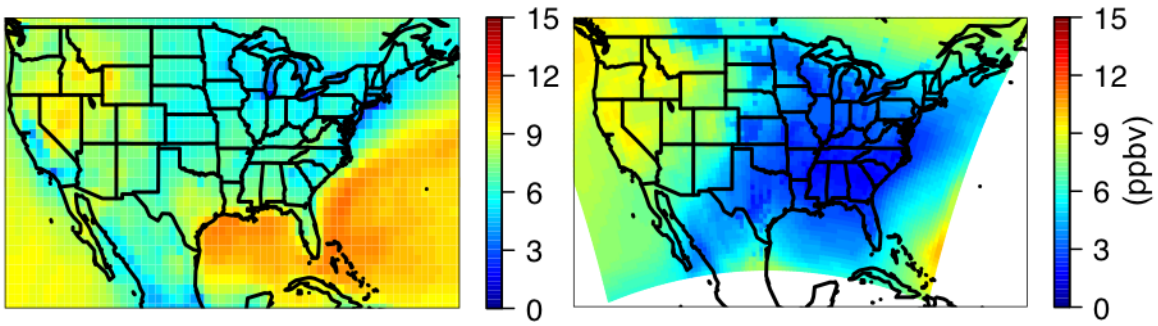

Figure S1. RAQMS mean surface O_3 changes (ppbv) due to assimilating OMI and MLS O_3 (left) and the resulting O_3 changes in STEM O_3 (right) in June 2010.

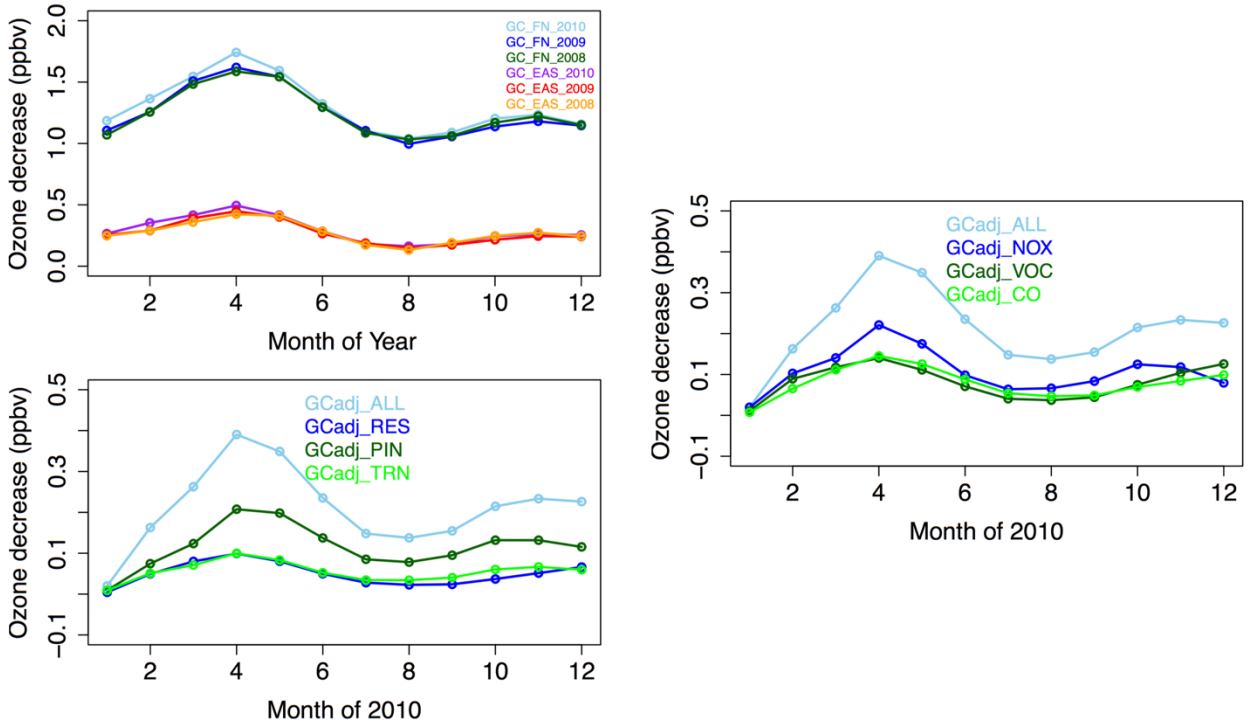

Figure S2. (Upperleft) North American surface R(O_3, EAS, 20%) and R(O_3, all-non NAM, 20%) from SNU GEOS-Chem simulation, summarized by year. GEOS-Chem adjoint estimated North American surface R(O_3, EAS, 20%), in response to emission perturbations of the individual emission sector (lowerleft, RES: residential; PIN: power and industry; TRN: transportation), and different O_3 precursors (right).

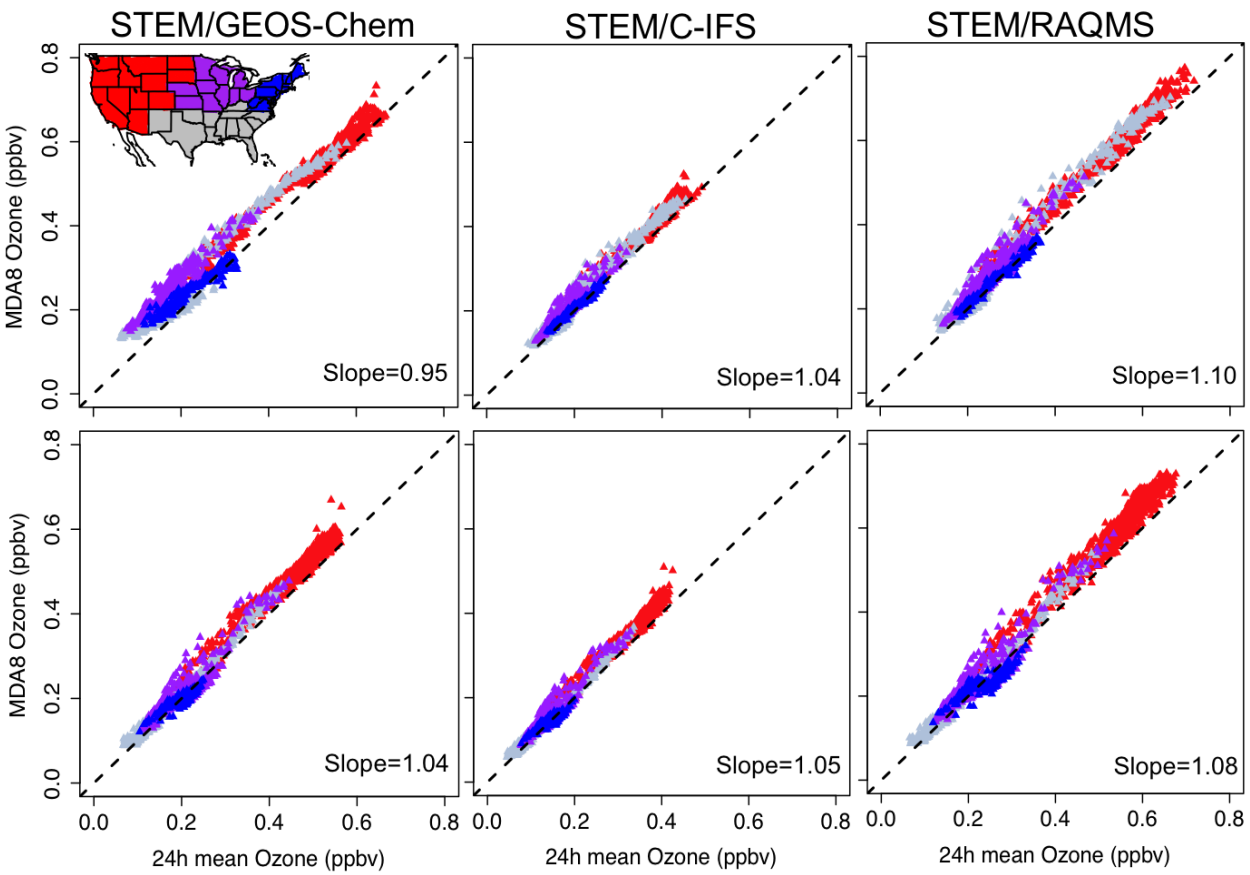

Figure S3. Scatterplots of STEM MDA8 and all-time R(O_3, EAS, 20%) for (upper) May and (lower) June 2010 in all US model grids, colored by four different US subregions. The subregions are defined in the inset of the upperleft panel, also consistent with the definitions in Figure 2/Tables 2-3. The results from the STEM runs using (left) GEOS-Chem, (middle) ECMWF C-IFS and (right) RAQMS boundary conditions are shown separately.

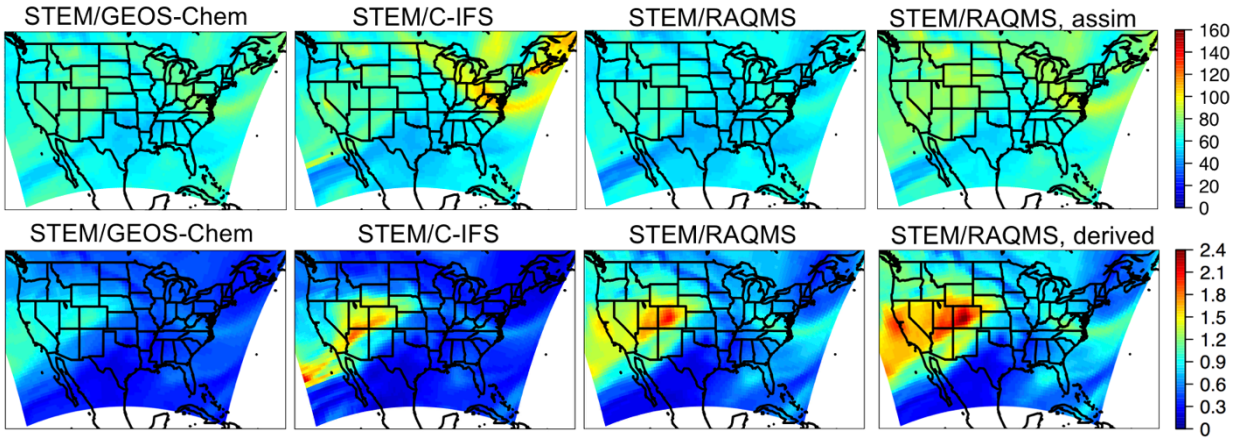

Figure S4. Same as Figure 12, but for ~400-500 hPa, at 18 UTC of 9 May, 2010.

Table S1. HTAP2 regional and global anthropogenic emissions from various sectors for NO_x, NMVOCs, and CO, in tons/year. Source: http://edgar.jrc.ec.europa.eu/htap_v2/index.php

Year	Species	Region	Energy (Power)	Industry	Residential	Transportation
2008	NO_x	World	2.67E+07	2.19E+07	6.38E+06	4.23E+07
		MICS Asia	1.25E+07	1.20E+07	3.19E+06	1.74E+07
		US+Canada	3.41E+06	4.68E+06	9.59E+05	8.42E+06
2010		World	2.77E+07	2.30E+07	6.59E+06	4.18E+07
		MICS Asia	1.34E+07	1.37E+07	3.30E+06	1.80E+07
		US+Canada	3.09E+06	4.17E+06	9.81E+05	7.38E+06
2008	NMVOCs	World	1.16E+06	6.61E+07	4.19E+07	3.46E+07
		MICS Asia	4.81E+05	2.05E+07	2.17E+07	1.62E+07
		US+Canada	5.95E+04	9.47E+06	1.63E+06	5.63E+06
2010		World	1.17E+06	6.68E+07	4.30E+07	3.45E+07
		MICS Asia	4.99E+05	2.31E+07	2.22E+07	1.73E+07
		US+Canada	5.40E+04	8.97E+06	1.57E+06	4.61E+06
2008	CO	World	8.44E+06	1.39E+08	2.33E+08	1.70E+08
		MICS Asia	5.04E+06	9.95E+07	1.47E+08	6.16E+07
		US+Canada	7.51E+05	6.70E+06	1.55E+07	4.27E+07
2010		World	8.91E+06	1.37E+08	2.39E+08	1.60E+08
		MICS Asia	5.44E+06	9.96E+07	1.51E+08	6.03E+07
		US+Canada	6.82E+05	5.79E+06	1.47E+07	3.42E+07