Quantifying pollution inflow and outflow over East Asia in spring with regional and global models

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Supplementary Figures

Atmospheric Chemistry and Physics

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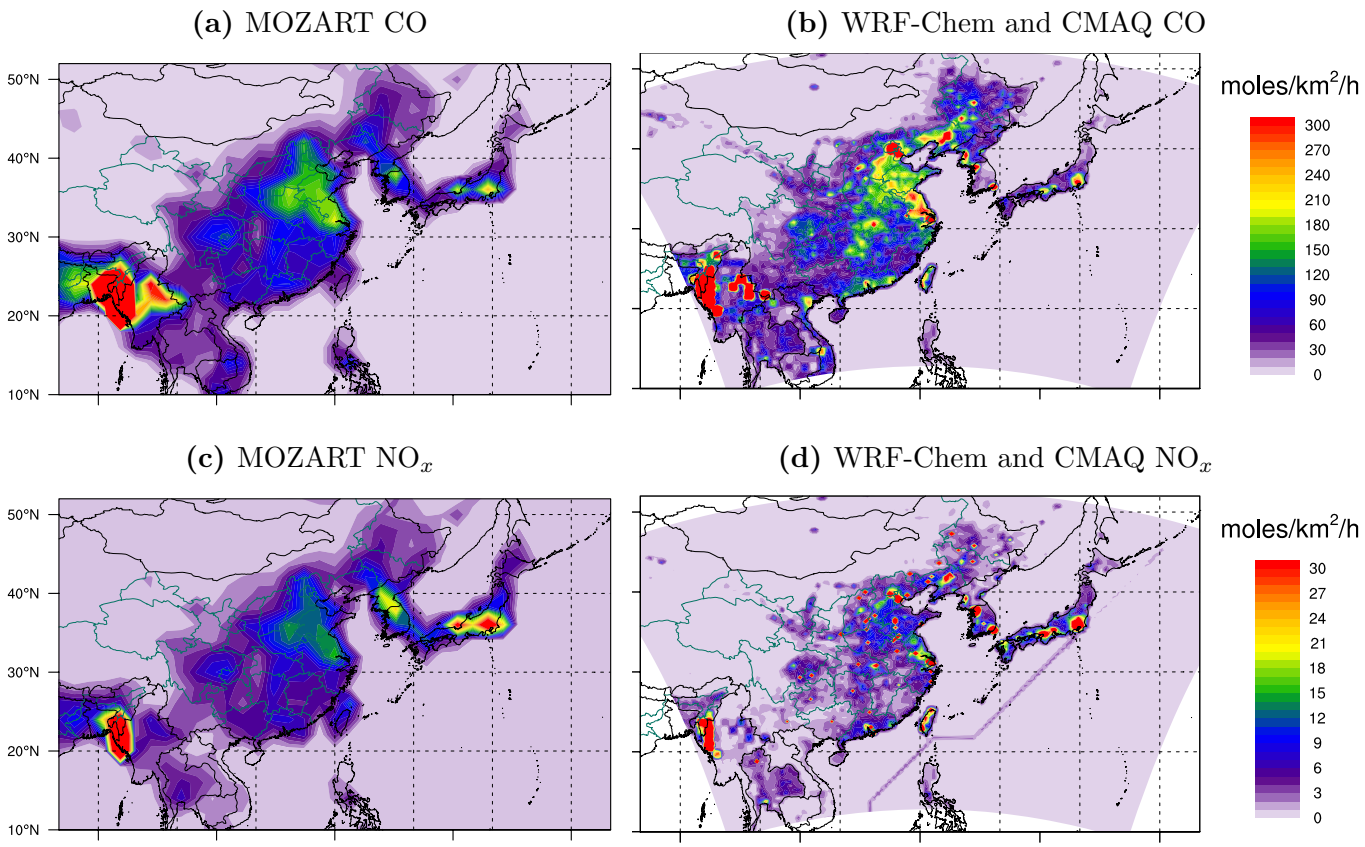
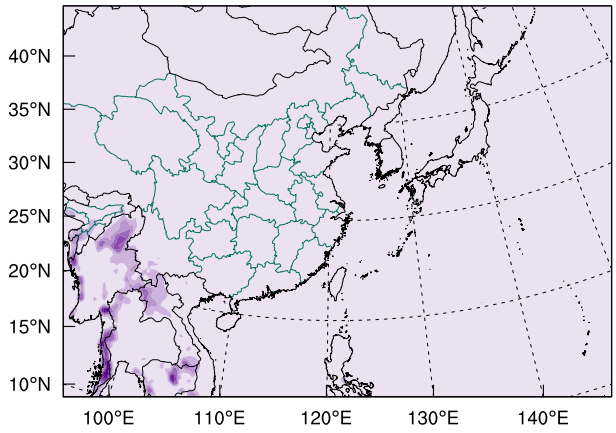


Figure S1. Comparison of MOZART, WRF-Chem and CMAQ anthropogenic (including biomass burning) emissions of CO and NO_x during March, in units of moles/km^2/h. WRF-Chem and CMAQ emissions are provided on a grid with resolution of 36 km x 36 km; MOZART emissions are provided on a grid with resolution $1.9° \times 1.9°$.

(a) ISOPRENE in WRF-Chem



(b) ISOPRENE in CMAQ

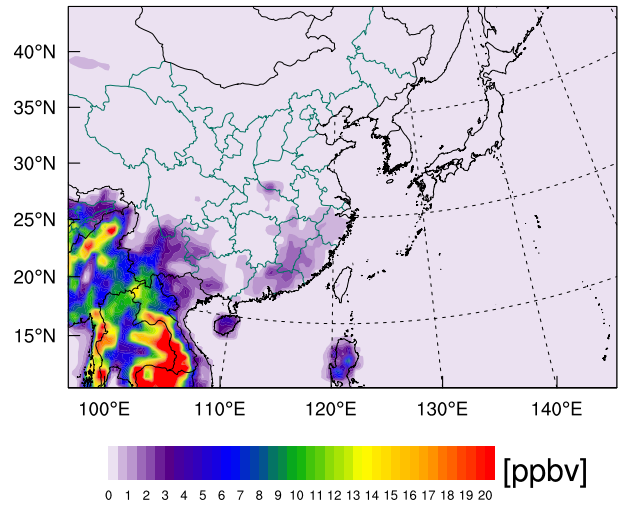


Figure S2. Monthly mean isoprene concentrations in CMAQ and WRF-Chem for March 2001.

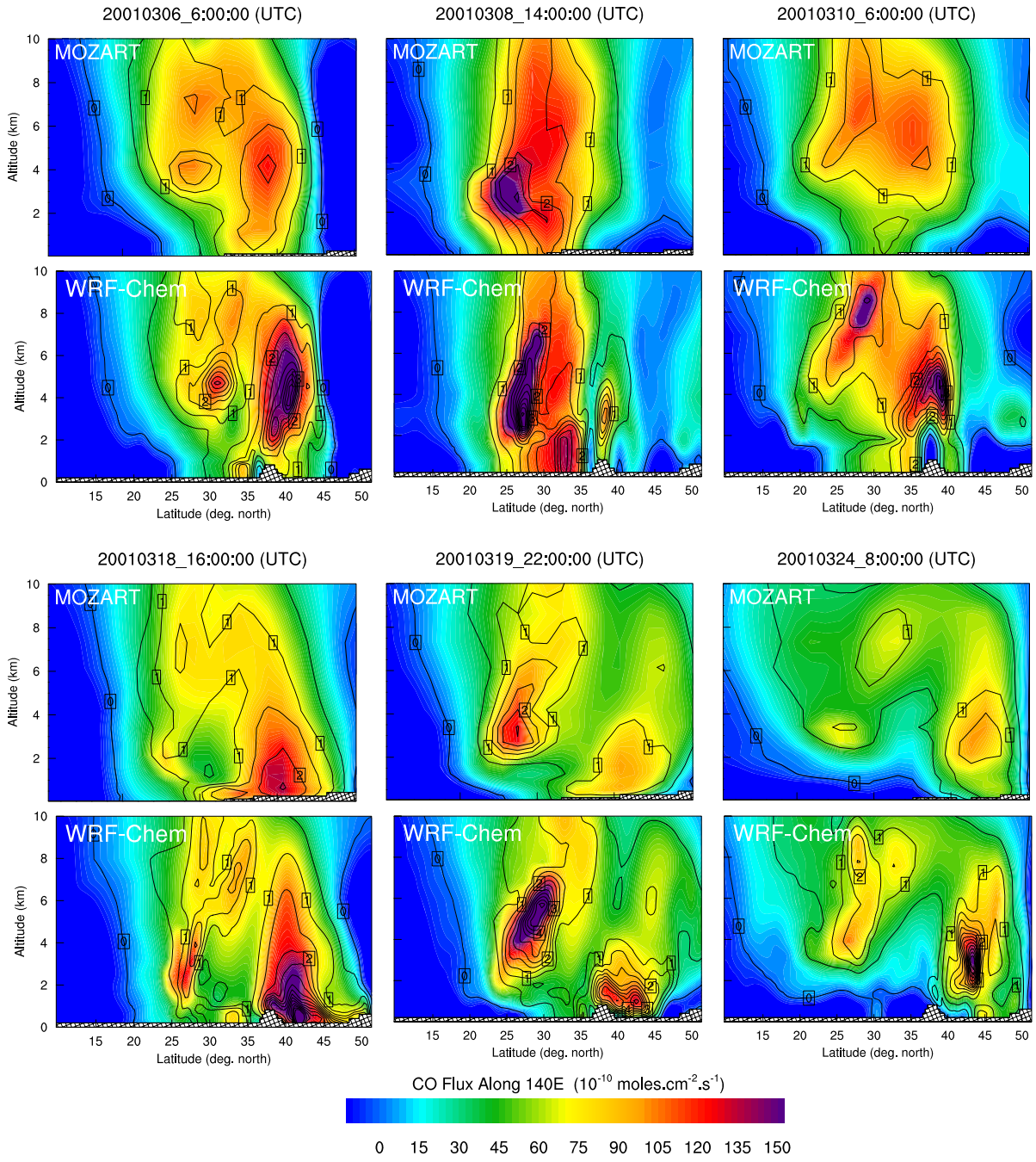


Figure S3. Comparison of MOZART and WRF-Chem simulated zonal fluxes of CO and PAN along 140°E. PAN flux is shown as contours from 0.0 to 7.5 by 0.5x10^{-11} moles cm^{-2} s^{-1}.

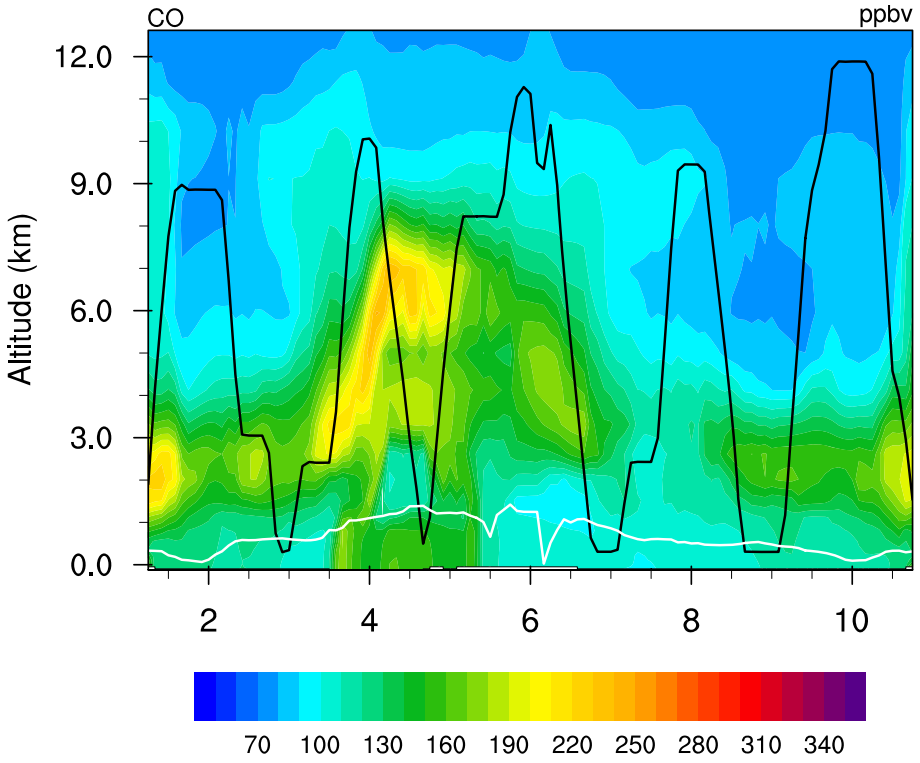


Figure S4. WRF-CMAQ calculated vertical distributions of CO along the DC-8 flight track on 7-March during the TRACE-P campaign. The black line indicates the flight path also shown in Figure 4 with corresponding UTC labels.

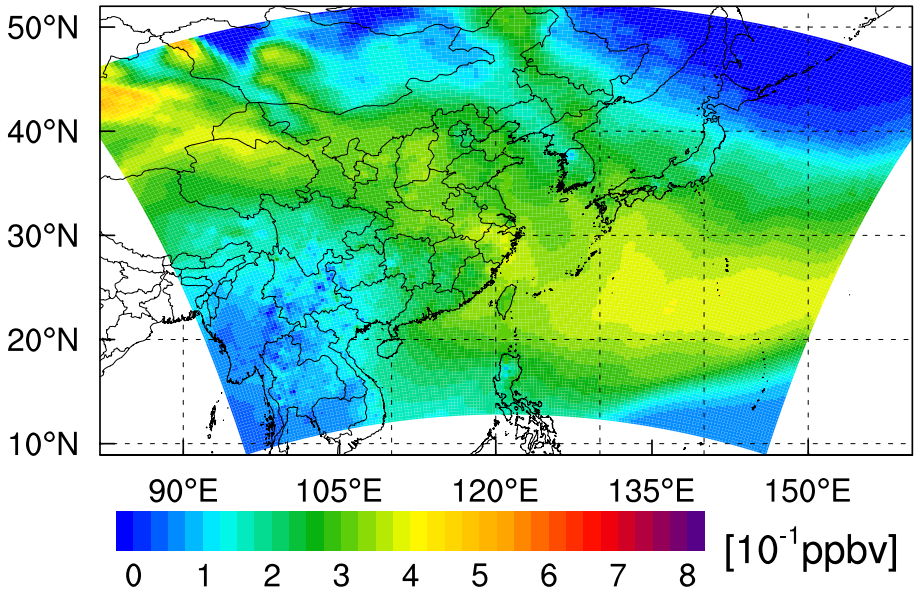


Figure S5. WRF-Chem calculated surface ozone responses (mean=0.22 ppbv) over East Asia averaged over 1-15 March to 20% reductions in European anthropogenic emissions of ozone precursors.

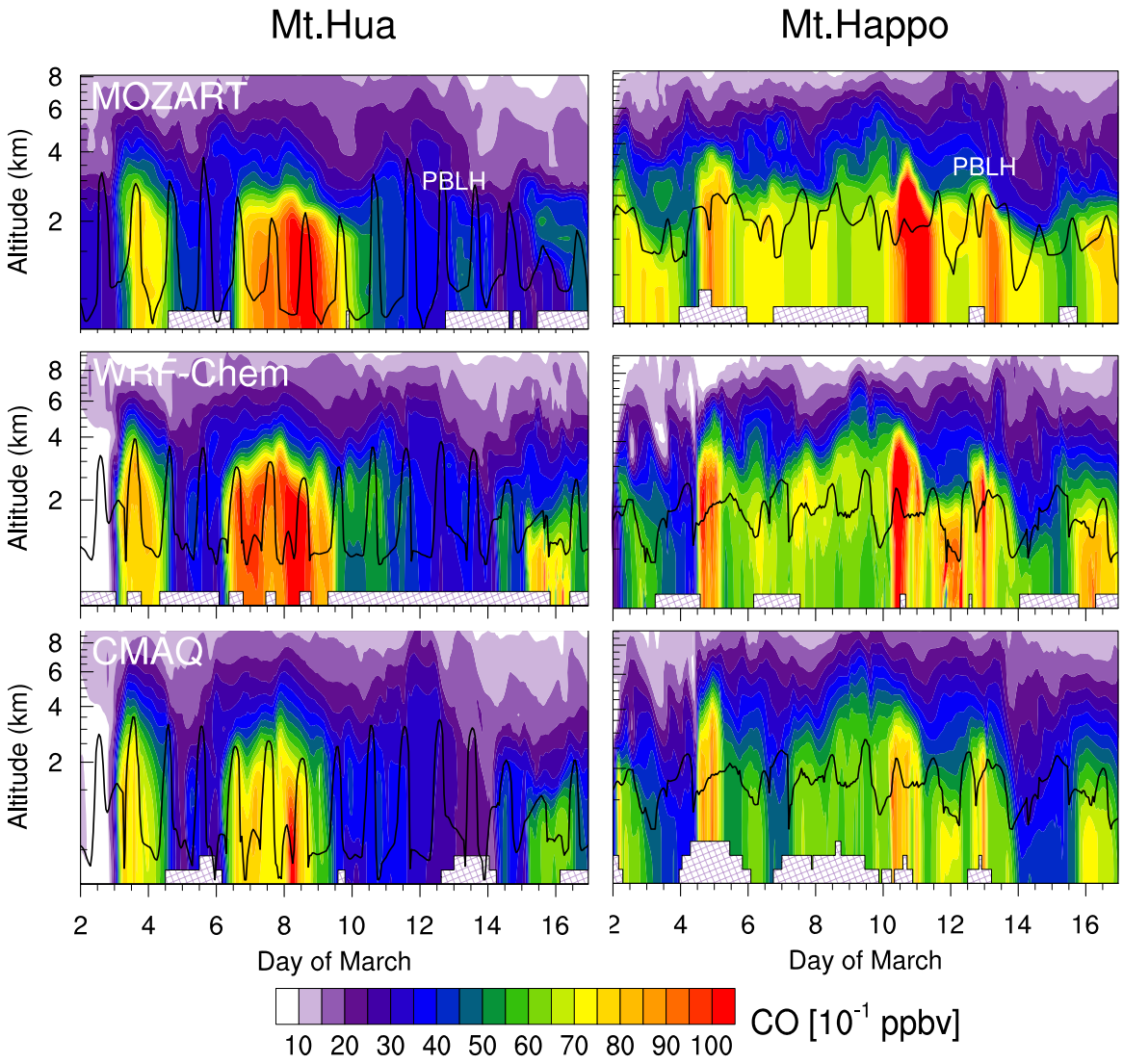


Figure S6. Time and vertical evolution of European air masses over China (Mt.Hua) and Japan (Mt.Happo), as diagnosed by CO changes in response to 20% perturbations in European emissions. The black line represents boundary layer depths.