Figure S1. The sensitivity of tropospheric NO₂ columns to VOC emission estimated by CMAQ-DDM over May-June 2016 at 1:30 local time.
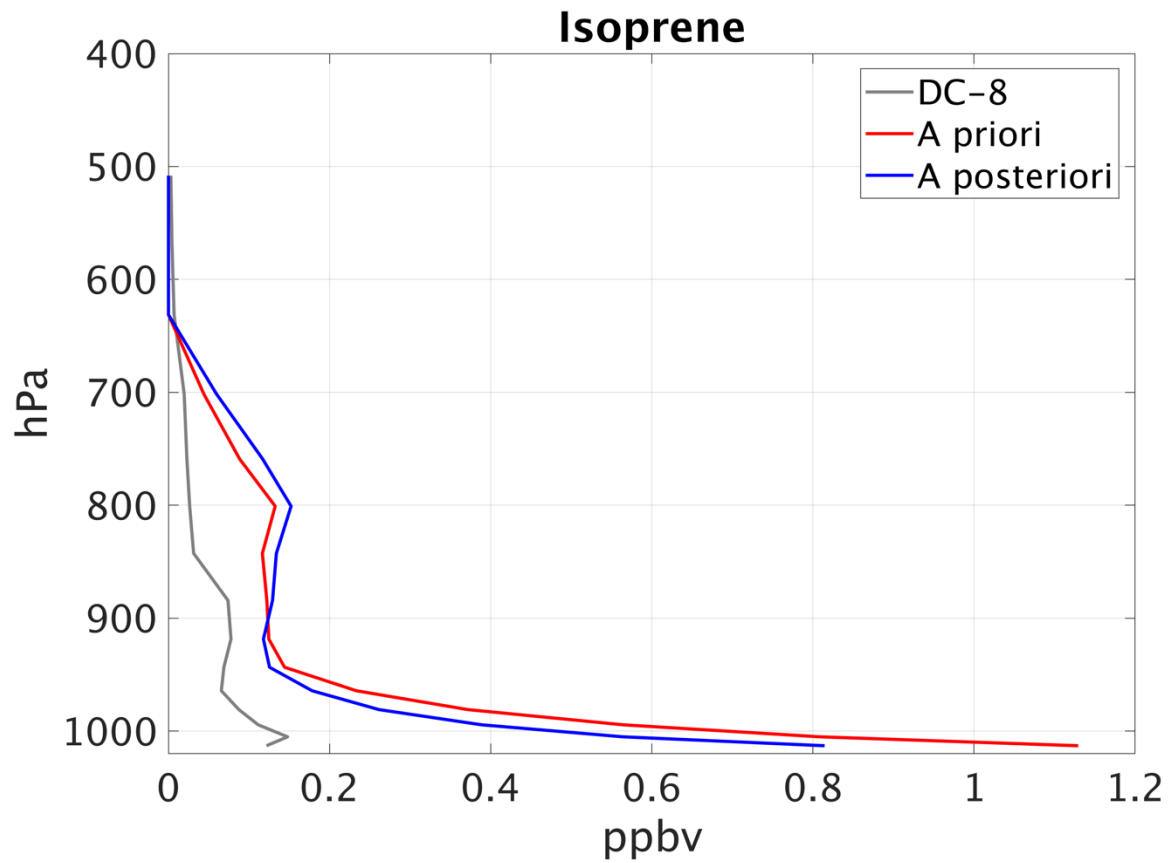
Figure S2. Comparison of the simulated model using the prior/posterior emissions and DC-8 measurements in terms of isoprene.
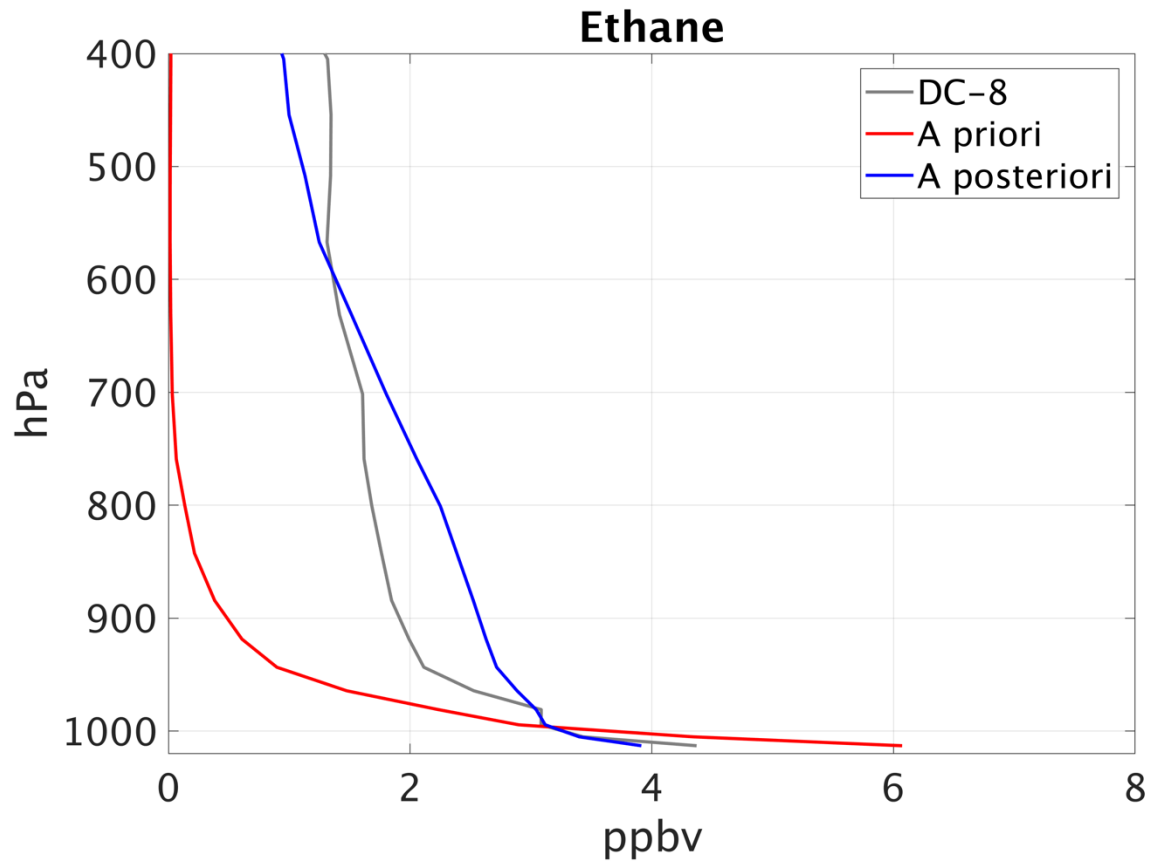
Figure S3. Comparison of the simulated model using the prior/posterior emissions and DC-8 measurements in terms of ethane.
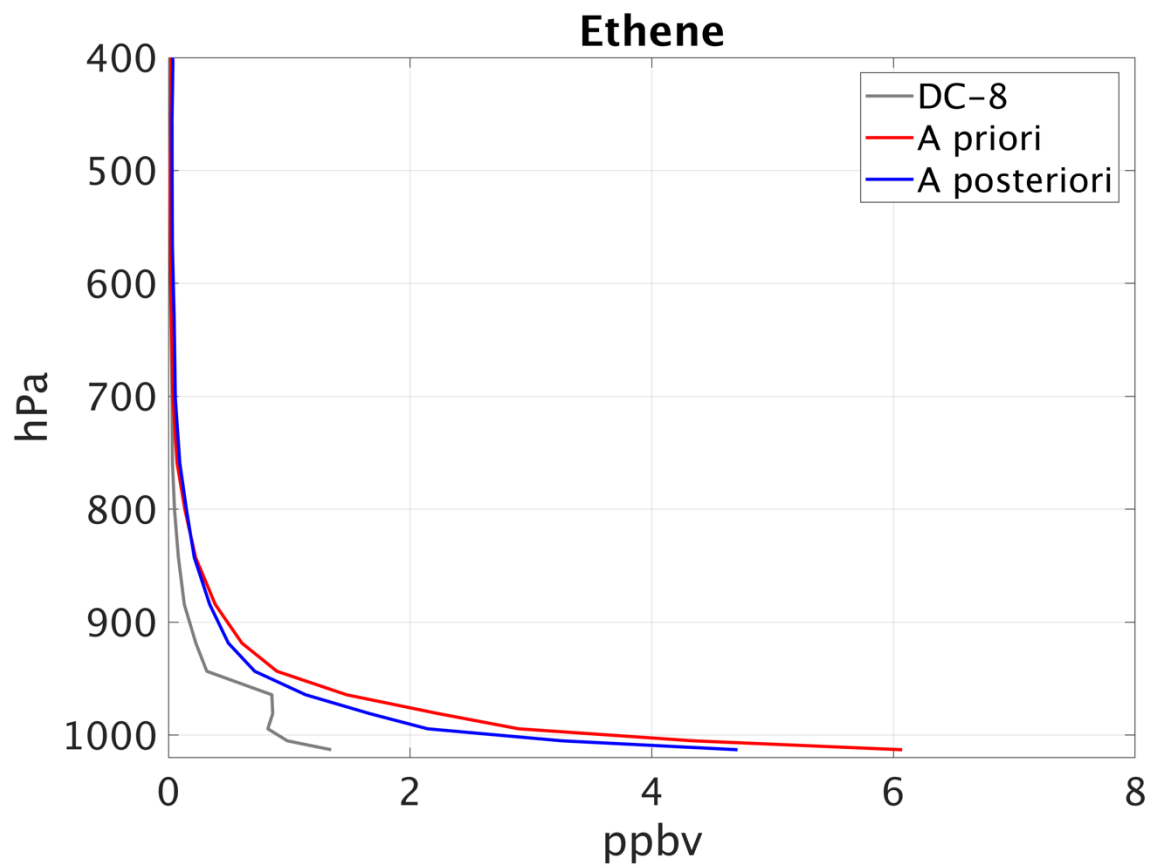
Figure S4. Comparison of the simulated model using the prior/posterior emissions and DC-8 measurements in terms of ethene.
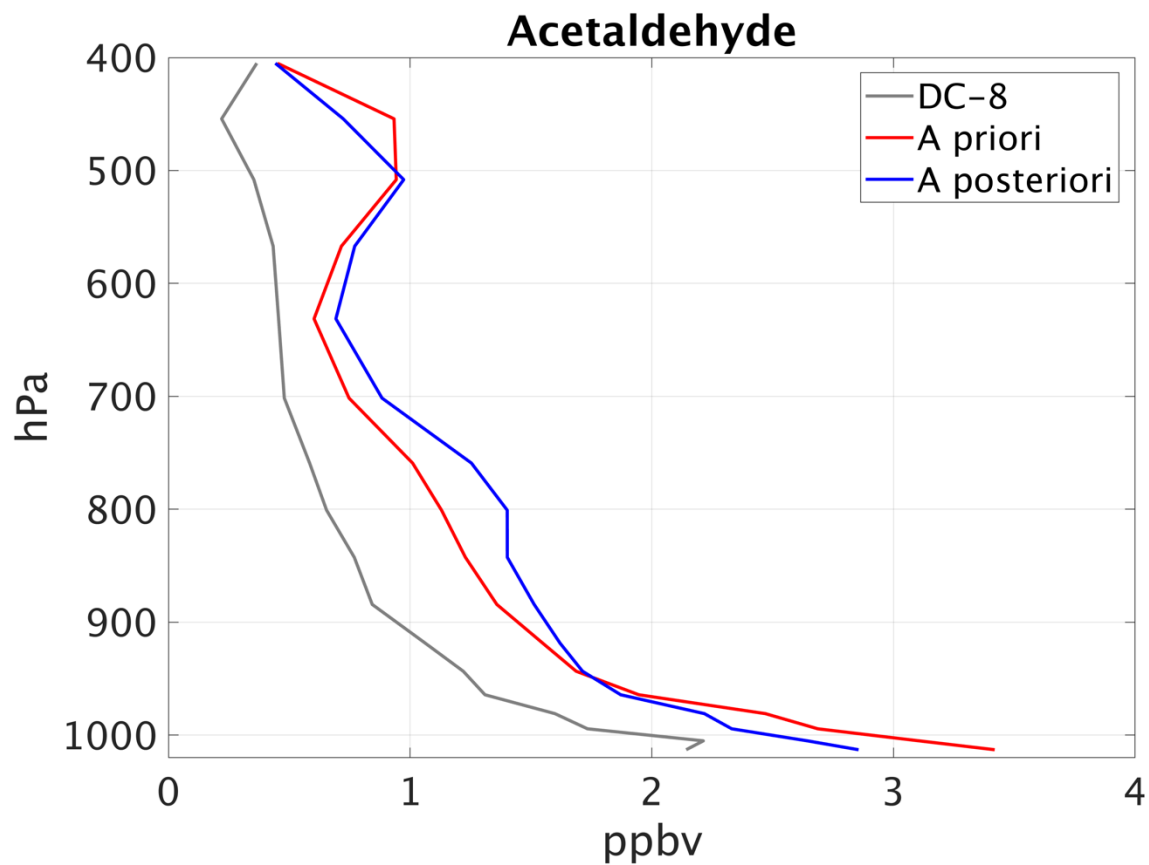
Figure S5. Comparison of the simulated model using the prior/posterior emissions and DC-8 measurements in terms of acetaldehyde.
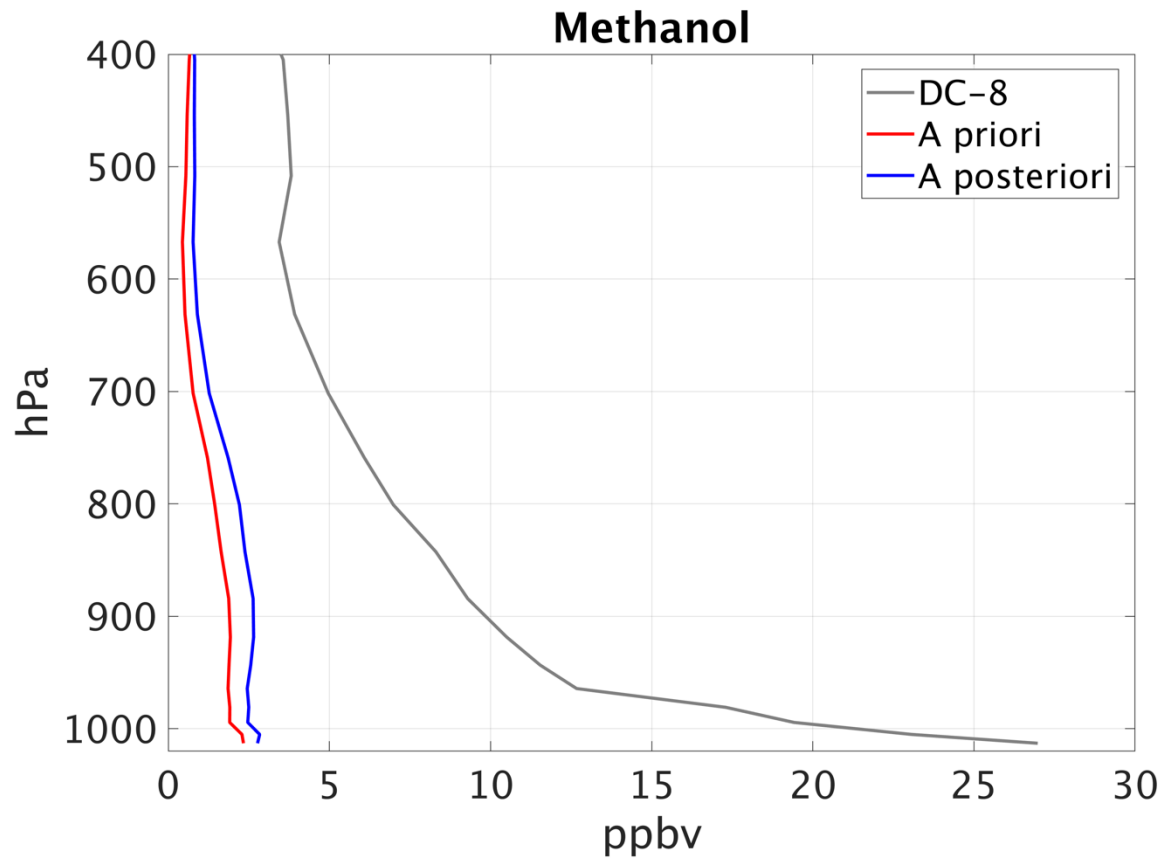
Figure S6. Comparison of the simulated model using the prior/posterior emissions and DC-8 measurements in terms of methanol.
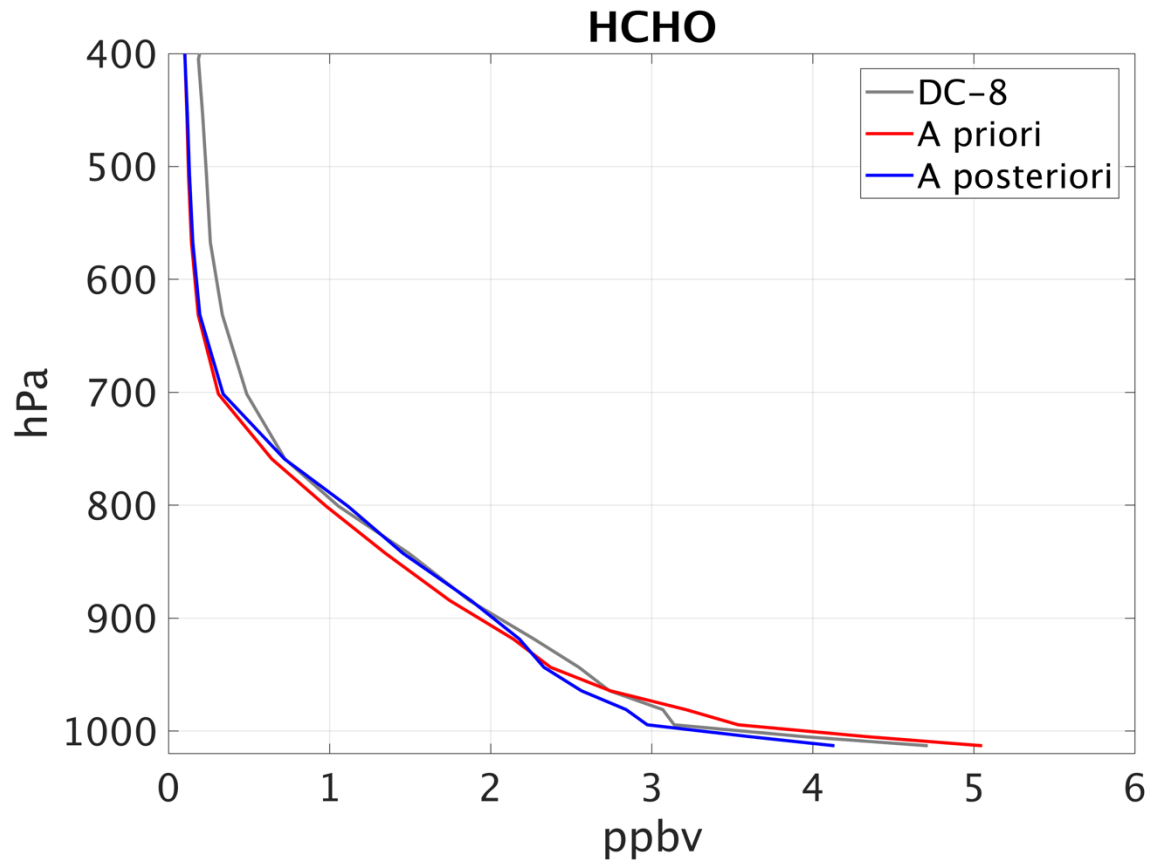
Figure S7. Comparison of the simulated model using the prior/posterior emissions and DC-8 measurements in terms of HCHO.
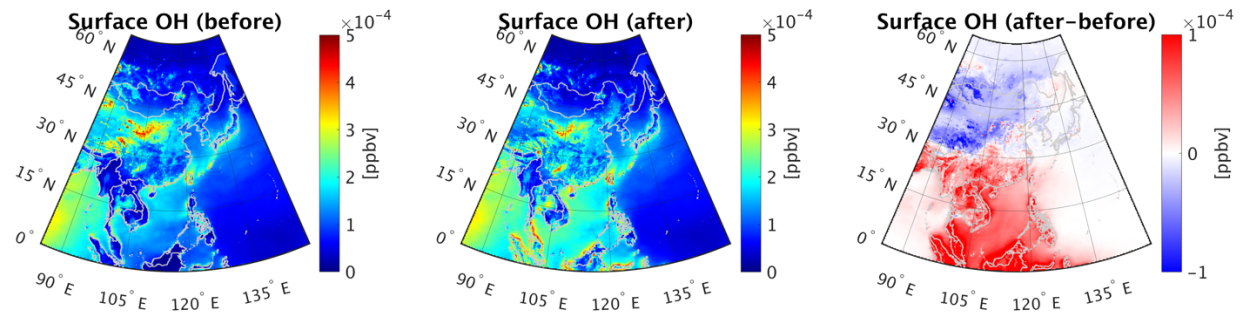
Figure S8. The simulations of surface OH before and after the inversion at 1200-1600 CST.
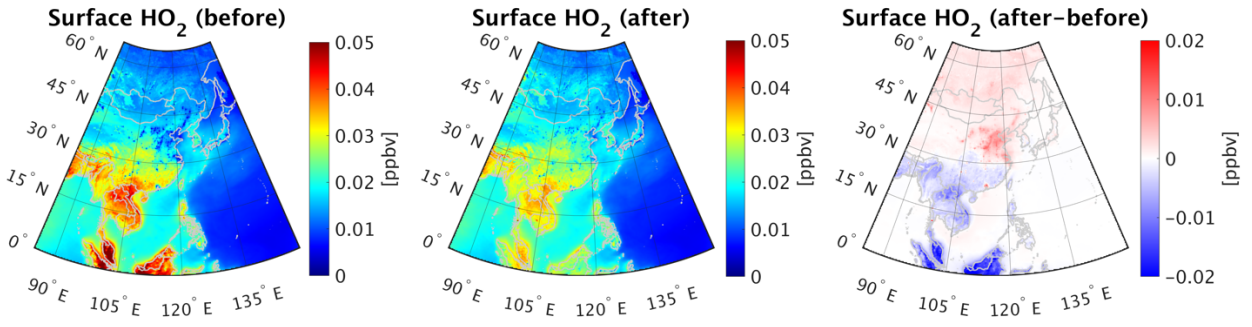
Figure S9. The simulations of surface HO$_2$ before and after the inversion at 1200-1600 CST.