

Figure 1. Number of CrIS ammonia retrievals used in the inversions within $0.5^\circ \times 0.5^\circ$ longitude/latitude bins for May to August 2016. The total number of retrievals for each month is displayed in the lower right corner of each panel.

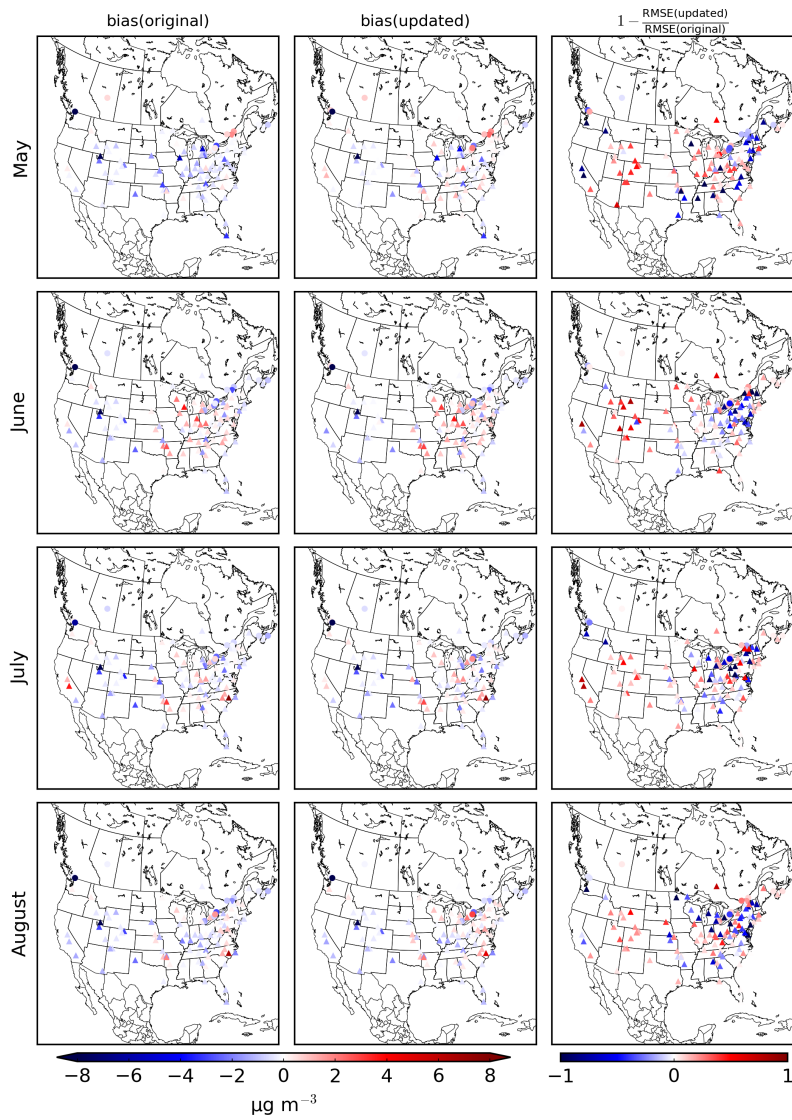


Figure 2. Comparisons of ammonia surface observations from the NAPS and AMoN networks with GEM-MACH surface fields. The left and center columns show bias values for each station when the original and updated ammonia emissions are used, respectively. The right column shows the relative improvement of the root-mean-square error (RMSE) for each station. NAPS and AMoN stations are denoted with circular and triangular markers, respectively.

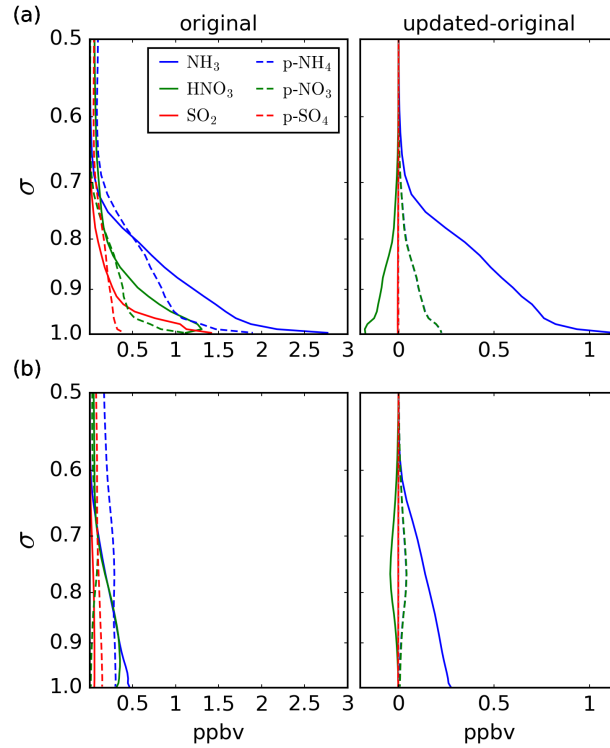


Figure 3. Monthly mean vertical profiles near (a) Toronto, Ontario and (b) Grand Junction, Colorado for May 2016. Plots on the left show mean profiles for GEM-MACH run with the original ammonia emissions, while plots on the right show mean differences between the updated and original runs. The vertical coordinate σ is the ratio of the pressure to the surface pressure. The legend in the upper right plot applies to all plots.