SUPPLEMENTAL INFORMATION TO

RECEPTOR MODELING OF NEAR-ROADWAY AEROSOL MASS SPECTROMETER DATA IN LAS VEGAS, NEVADA, WITH EPA PMF

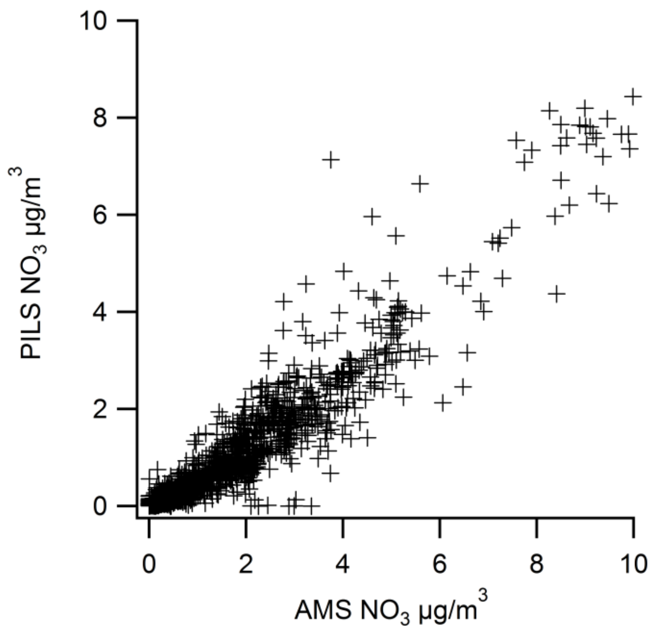

Figure 1. Comparison of PILS and AMS measured nitrate concentrations (µg/m3).

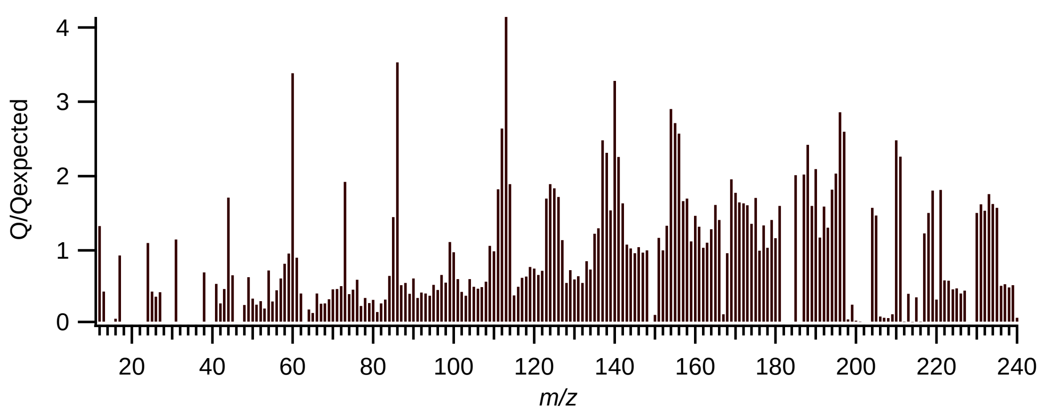

Figure 2. $Q/Q_{(expected)}$ by fragment for the four-factor solution. The highest $Q/Q_{(expected)}$ values are for *m/z* 113, 86, 60, and 140, all of which are greater than 3.

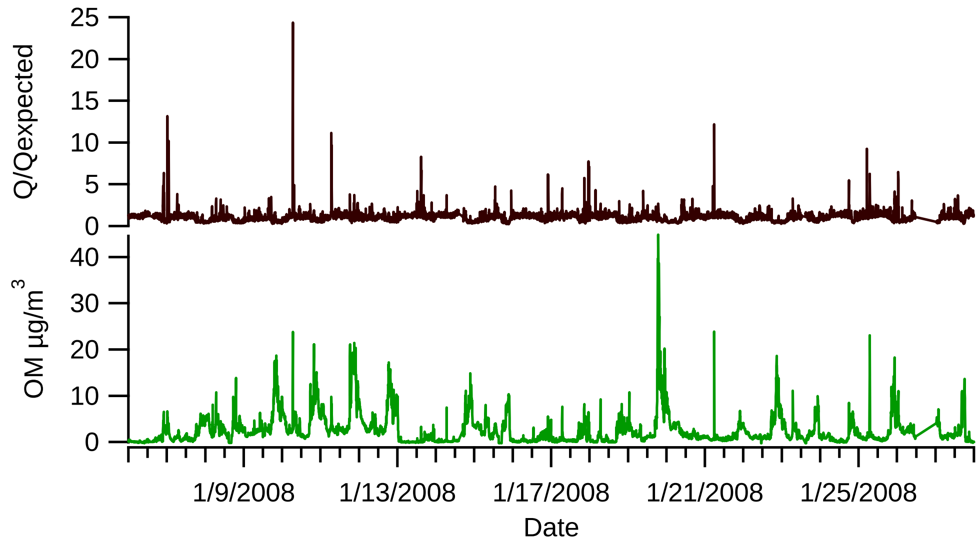

Figure 3. Time series of OM (μg/m^3) with $Q/Q_{(expected)}$ for the four-factor solution. Tick marks with the date indicate midnight on that date.

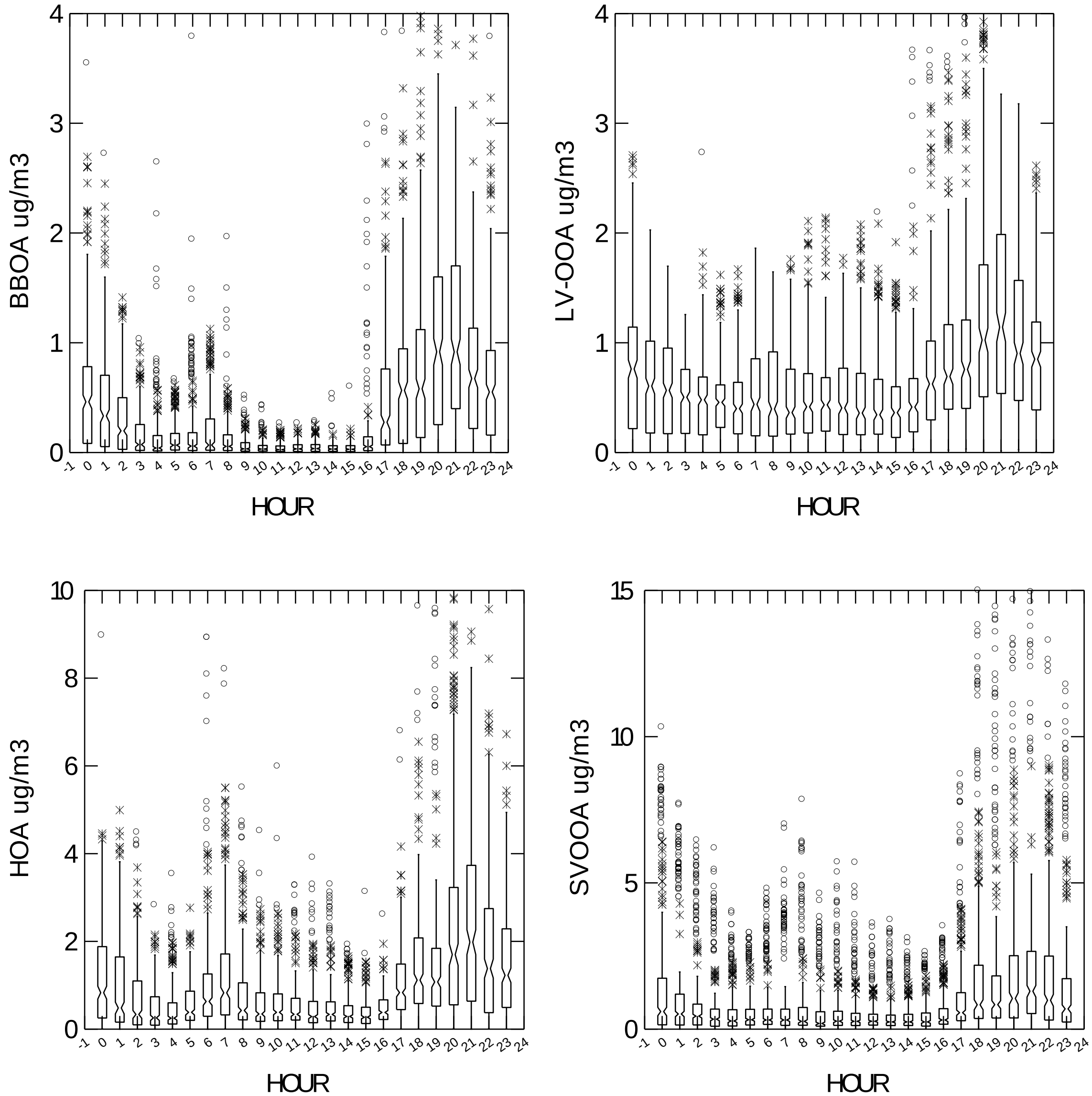

Figure 4. Notched box plots of factor contributions ($\mu g/m^3$) by hour in the four-factor solution for BBOA, LV-OOA, HOA, and SV-OOA ($\mu g/m^3$).

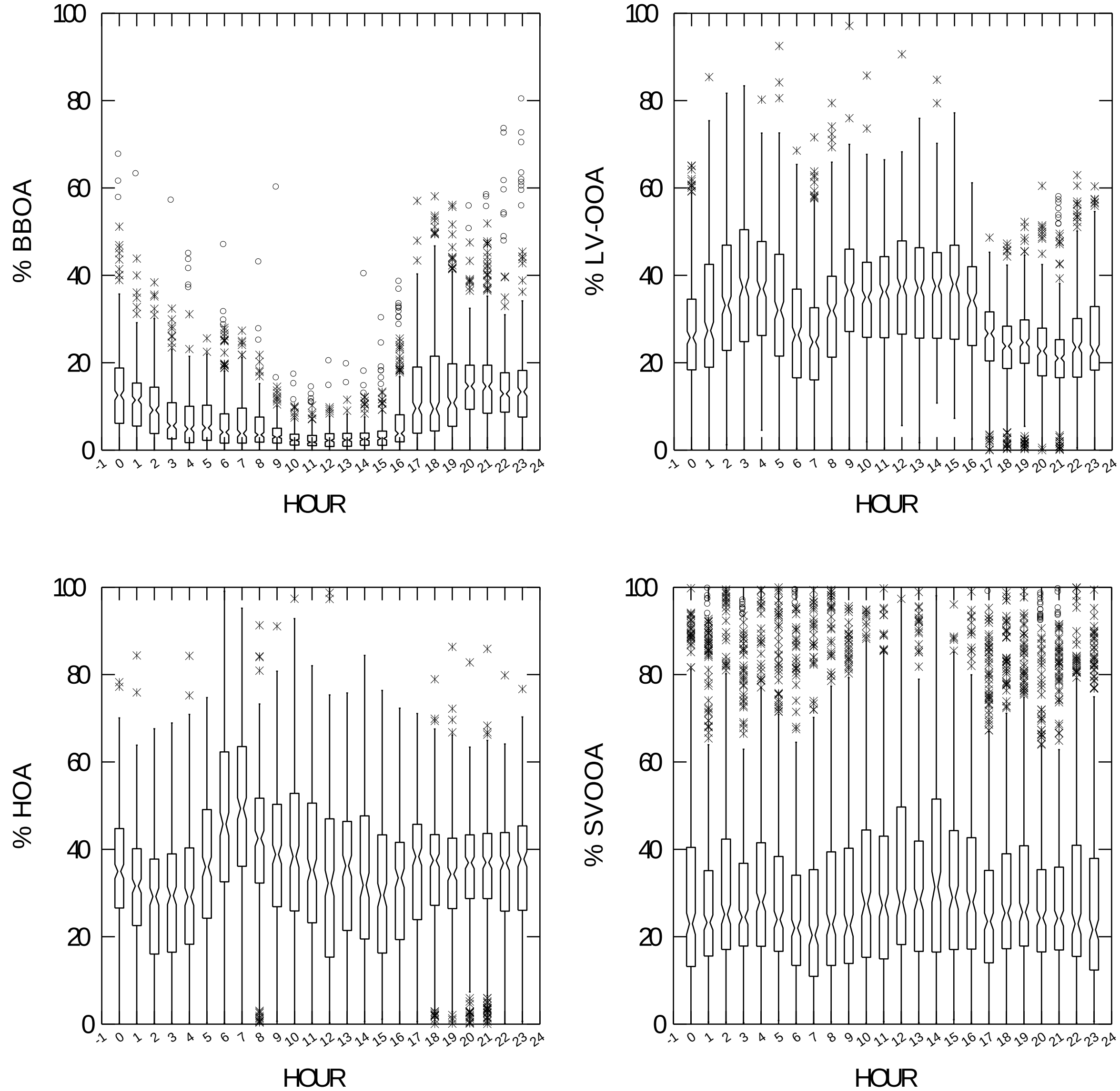

Figure 5. Notched box plots of factor contributions (% of total OM) by hour in the four-factor solution for BBOA, LV-OOA, HOA, and SV-OOA ($\mu g/m^3$).

G-space plots

G-space plots of the base solution show distinct edges, indicating some factor interdependence. The four-factor solution had the least number of edges (Figure 6). An edge between LV-OOA and BBOA occurs in the four-factor solution when BBOA is low but LV-OOA is present. This may be due to the difficulty in finding a "fixed" profile that accounts for BBOA, which likely changes over the course of an evening as the emission rate from biomass burning decreases and the emissions become more processed in the atmosphere. This idea is supported by the six-factor solution, in which additional factors better separate out and apportion BBOA and other sources.

The plot of HOA and LV-OOA has sufficient points at each axis so that there is no consistent edge away from the axes, but a subset of points shows a consistent ratio of 2.4 between HOA and LV-OOA. These points occur under all conditions throughout the study. In the five-factor solution (not shown) this is still evident, and there is more of an edge in the G-space plot. In the six-factor solution (not shown) this group of points is not as prominent, as the mass of LV-OOA under these high-mass conditions is now associated with night OA II. This suggests that the night OA factors may be informative, even if it is not clear what their sources are.

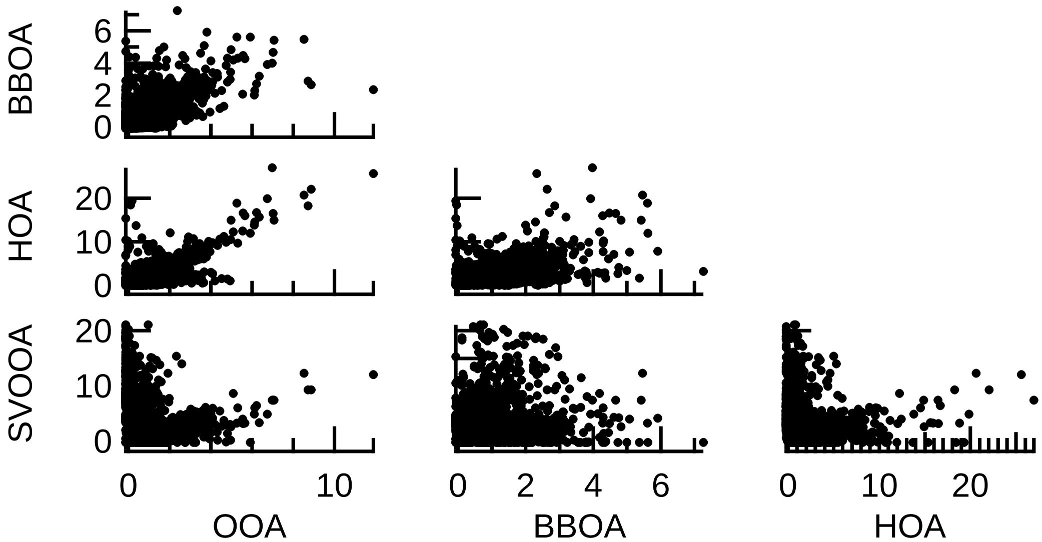

Figure 6. G-space plot for the four-factor solution.