Supplement of

Chemical Characterization of Secondary Organic Aerosol at a Rural Site in the Southeastern U.S.: Insights from Simultaneous HR-ToF-AMS and FIGAERO-CIMS Measurements

5   Yunle Chen et al.

*Correspondence to*: Nga Lee Ng (ng@chbe.gatech.edu)
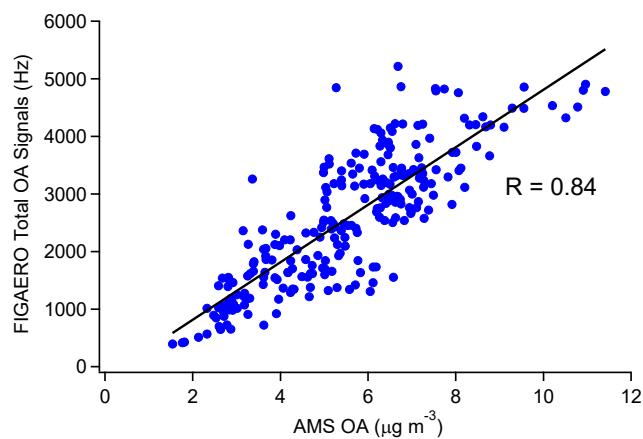
Figure S1 Correlation between FIGAERO total OA signals and AMS total OA mass concentration.
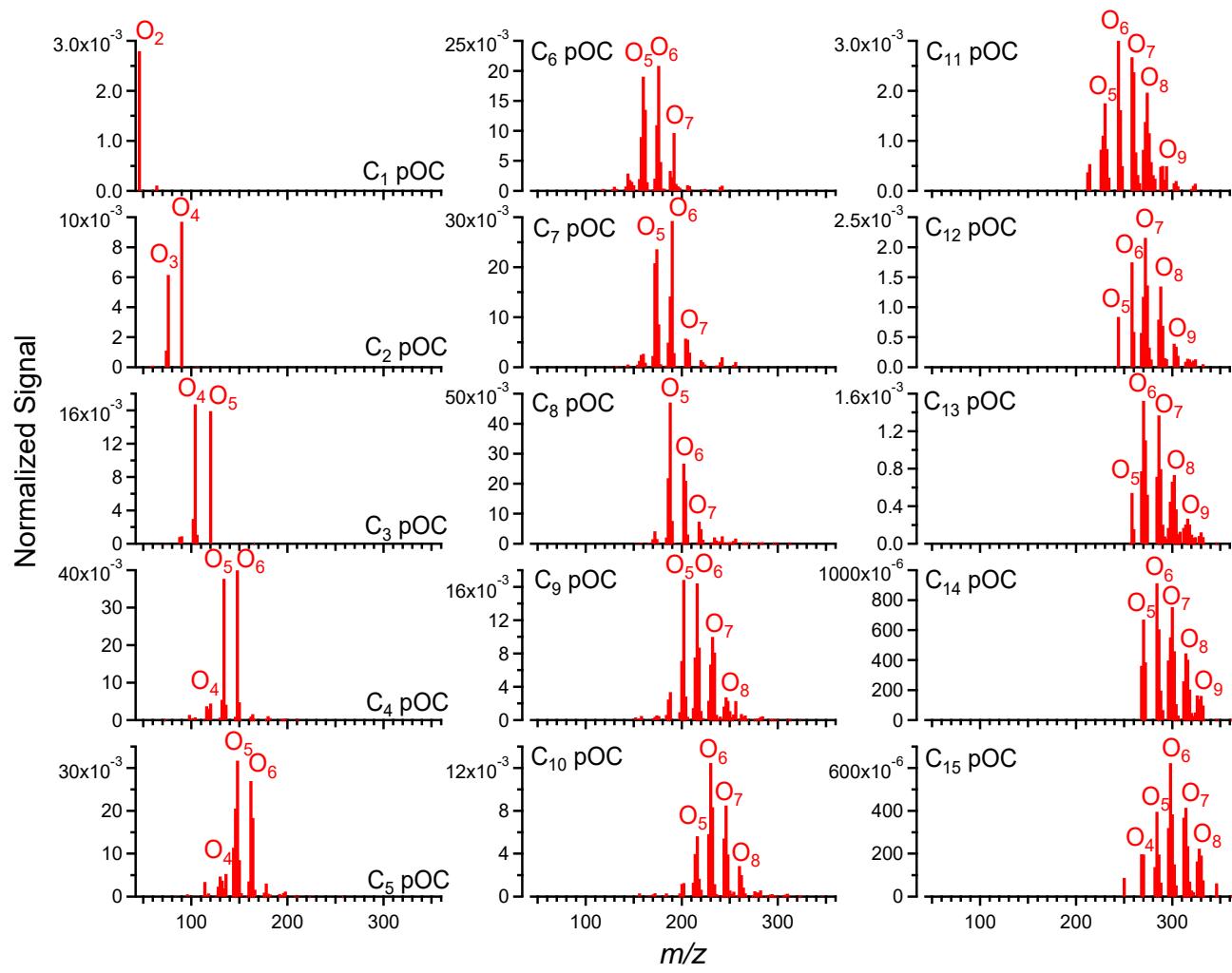
Figure S2 Normalized mass spectra of pOC ions measured by FIGAERO-CIMS, grouped by carbon atom number.
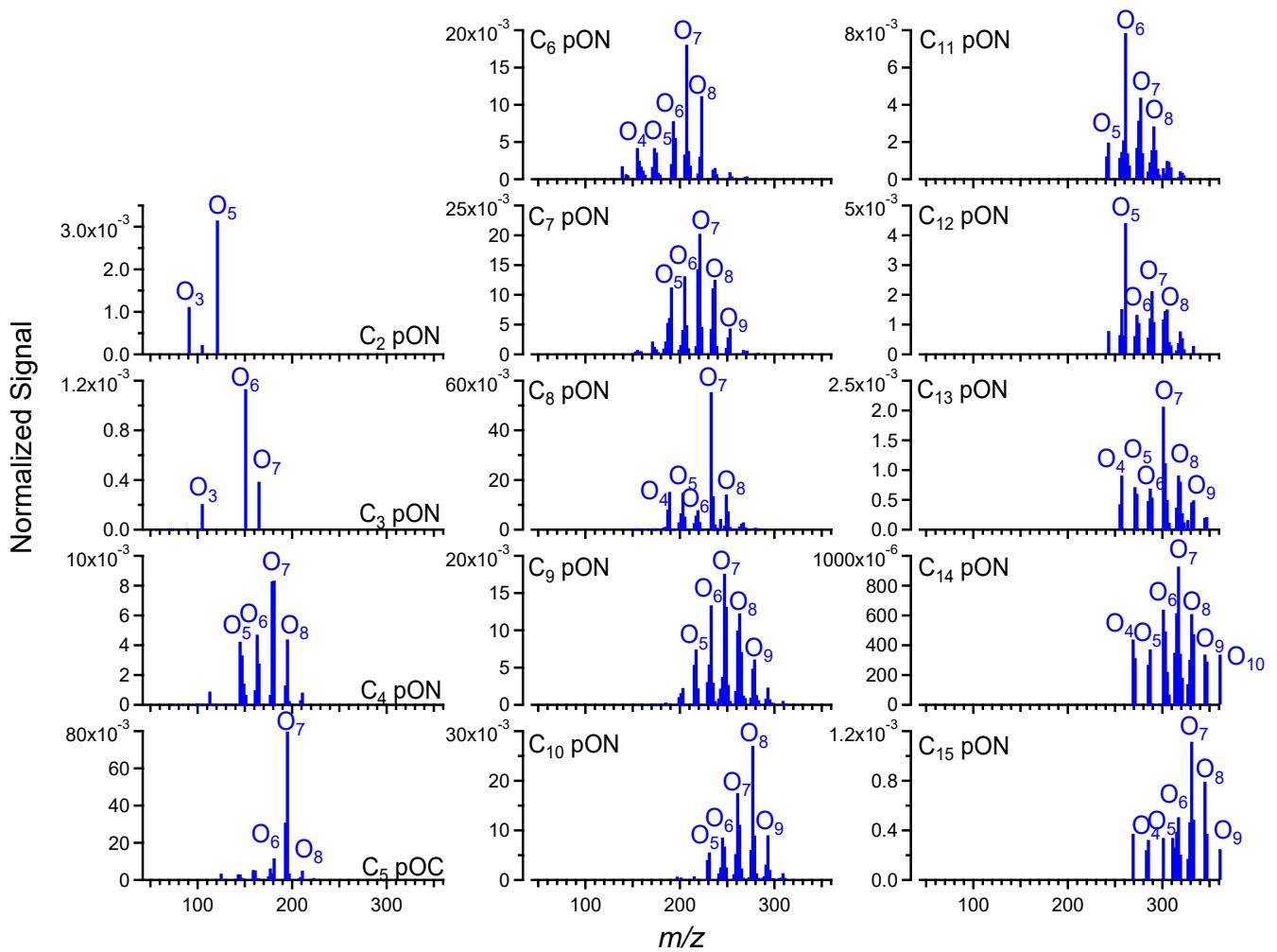
**Figure S3 Normalized mass spectra of pON ions measured by FIGAERO-CIMS, grouped by carbon atom number.**

5

4
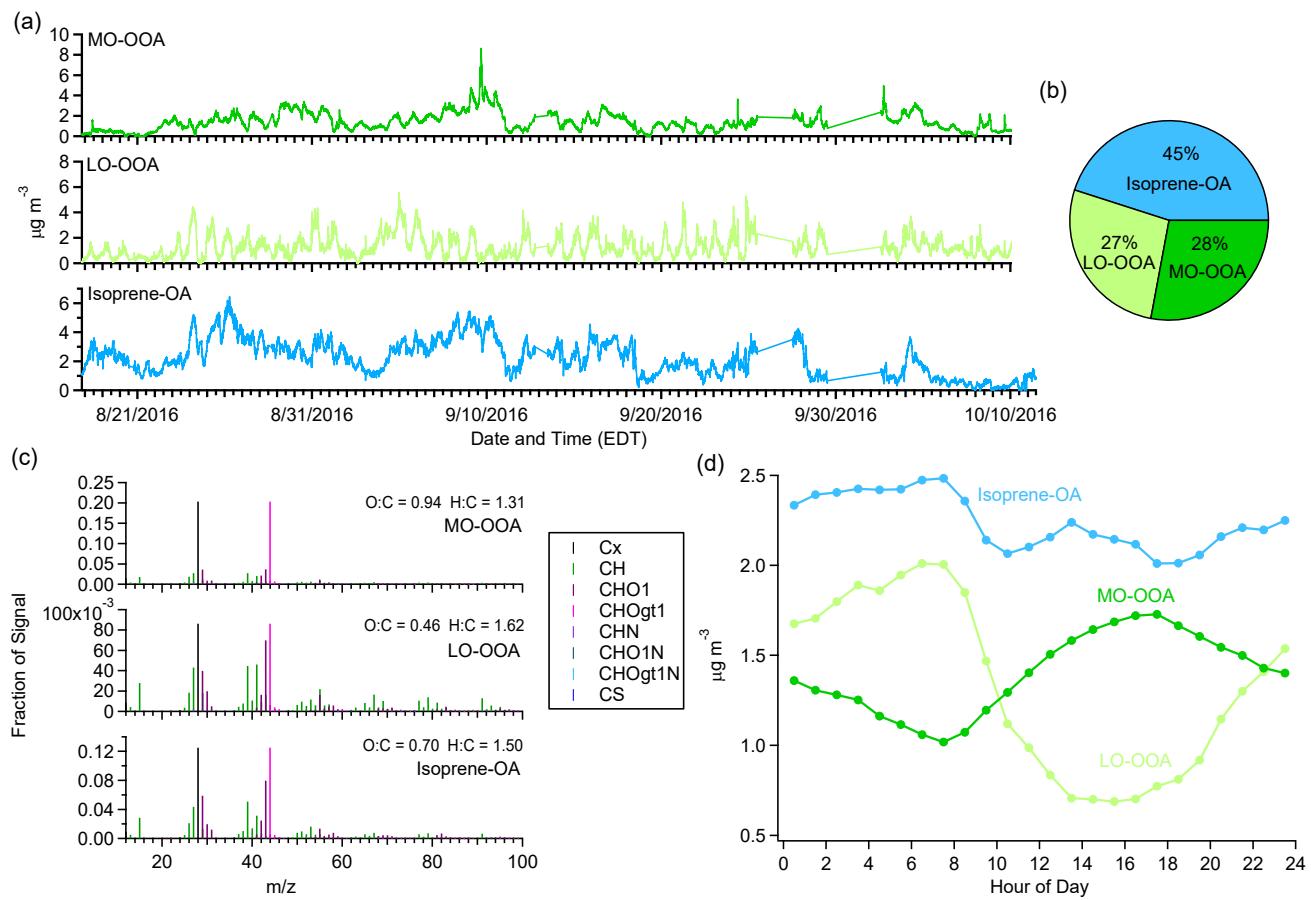
Figure S4 (a) Time series, (b) mass fraction, (c) normalized mass spectra, and (d) diurnal profiles of AMS OA factors resolved by PMF.
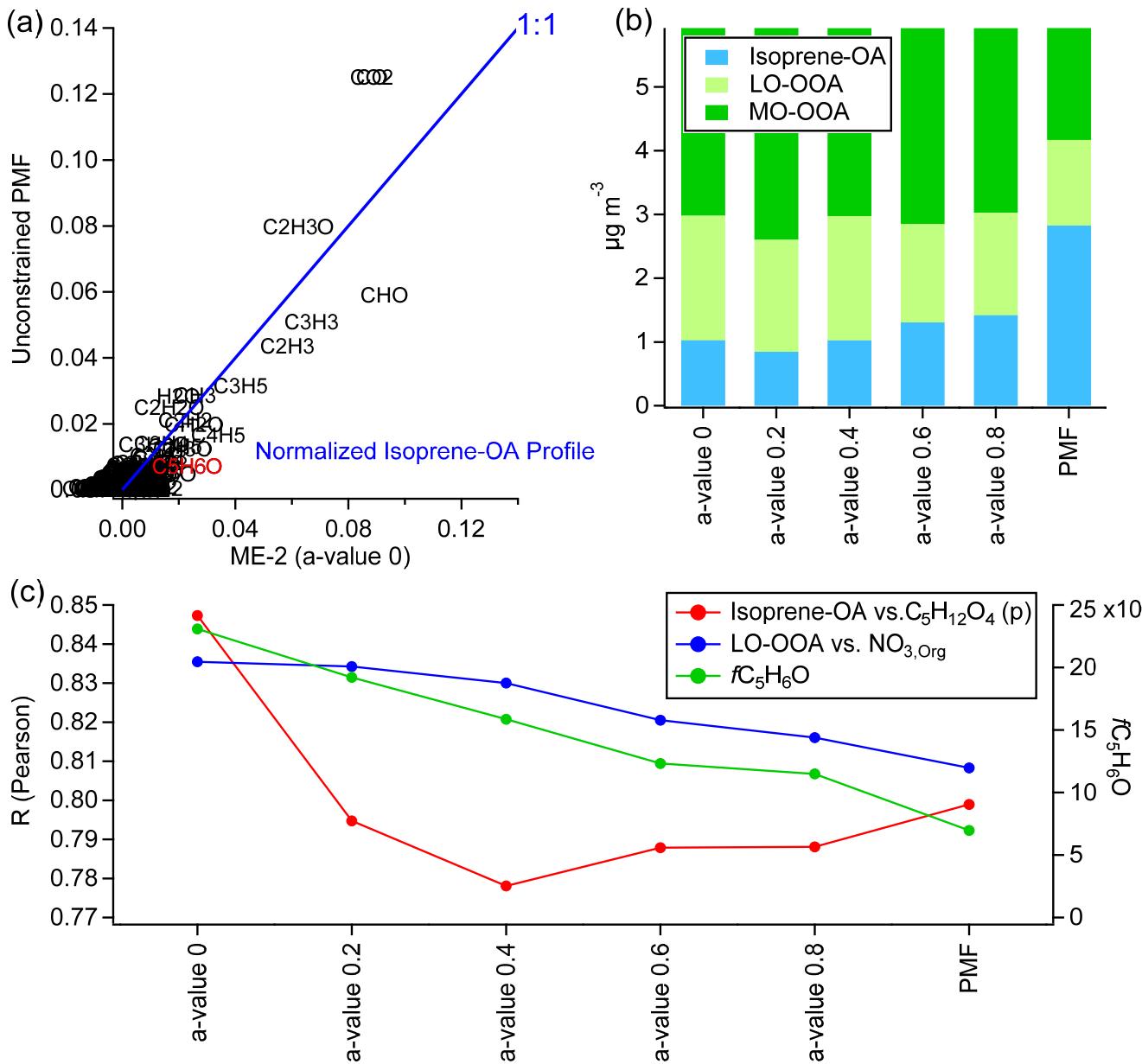
Figure S5 (a) comparison of Isoprene-OA profile resolved by PMF and ME-2 (a-value 0), (b) average mass concentration for the three factors for the model runs, and (c) correlations R (Pearson) between the time series of selected factors and the time series of external data as a function of the model runs.
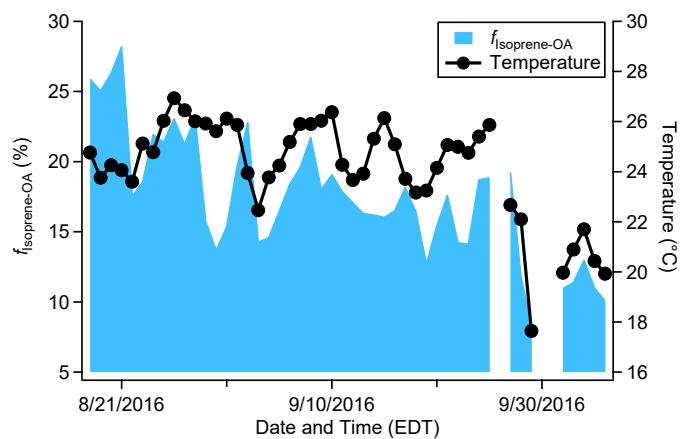
Figure S6 Time series (daily averaged) of the mass fraction of Isoprene-OA in total OA ($f_{\text{Isoprene-OA}}$) and temperature.
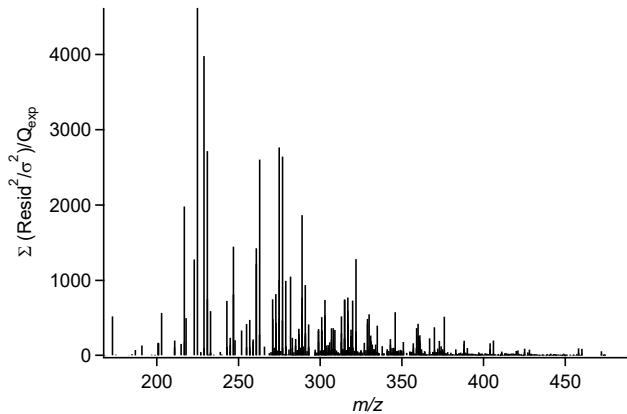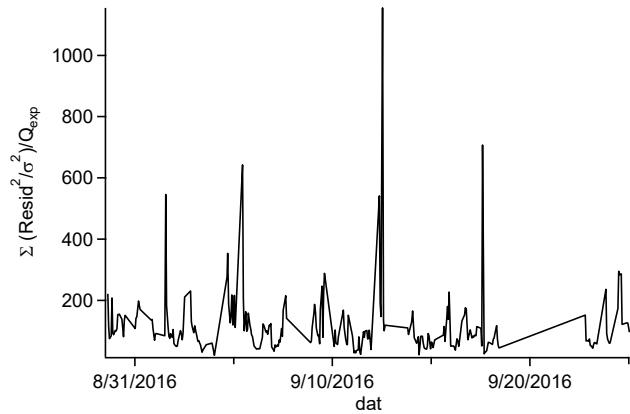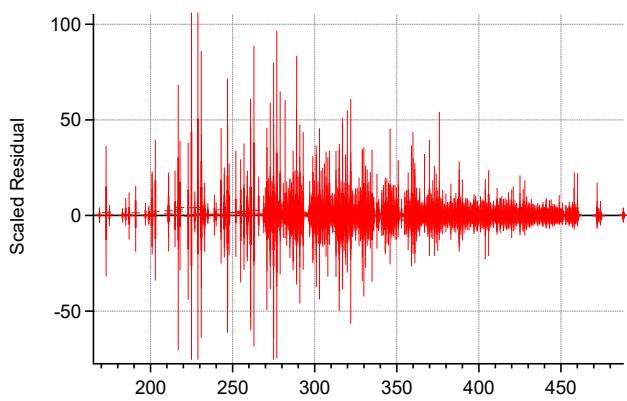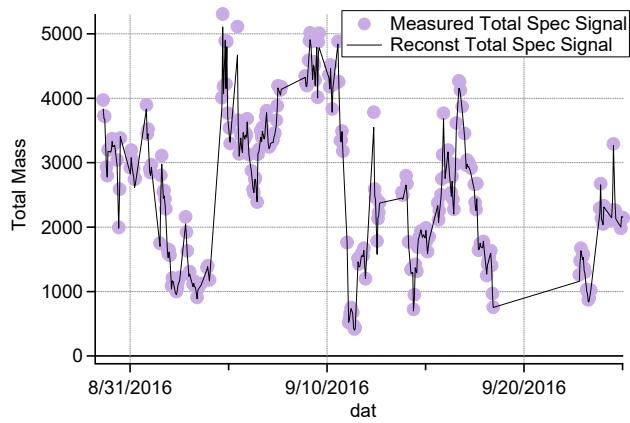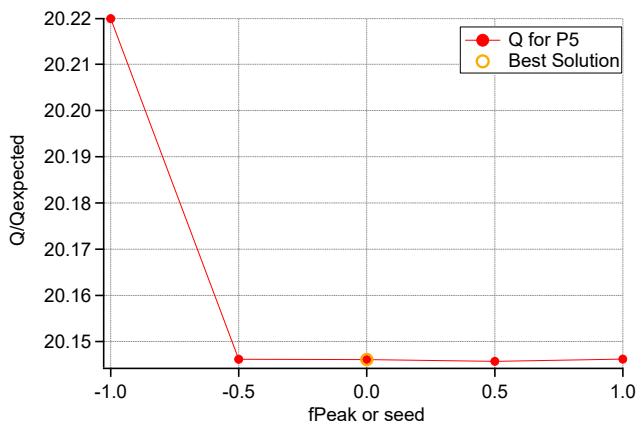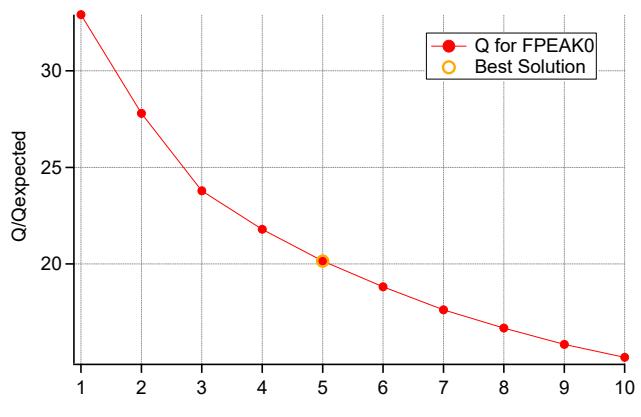
5   **Figure S7 Diagnostic plots of PMF analysis on FIGAERO-CIMS measurements.**
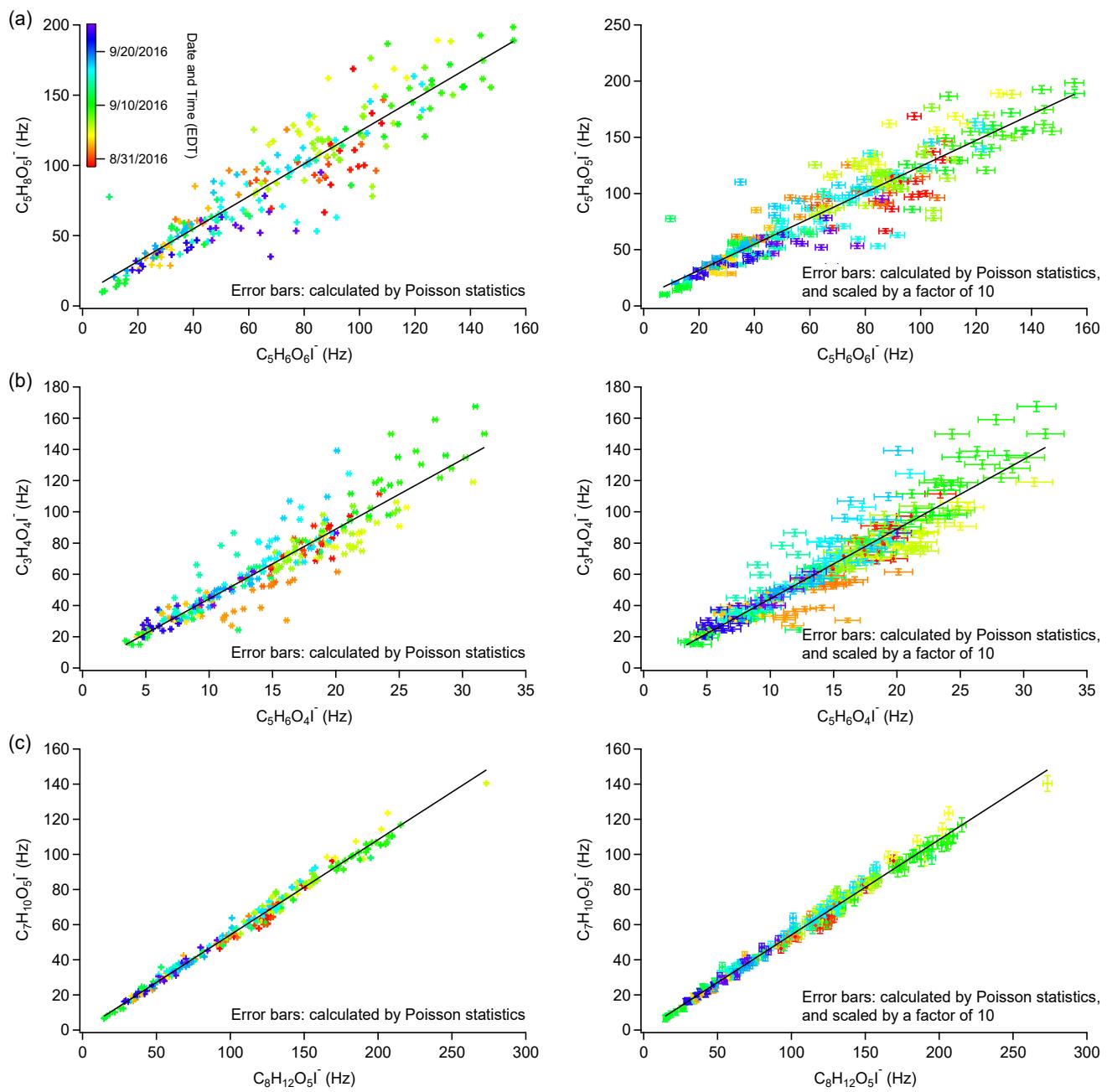
Figure S8 Scatter plots of pairs of highly-correlated ions, error bars representing estimated errors by simple Poisson statistics (left column) and after scaling by a factor of 10 (right column).
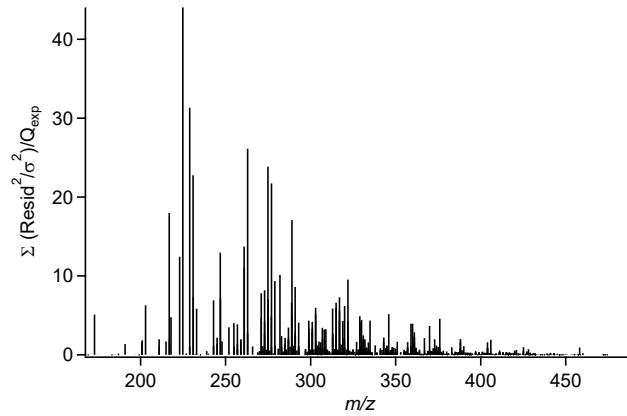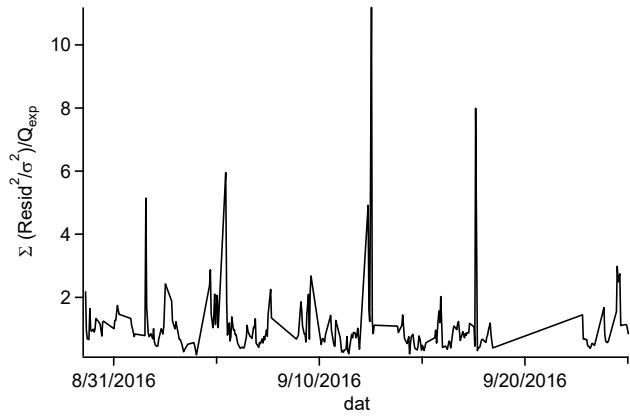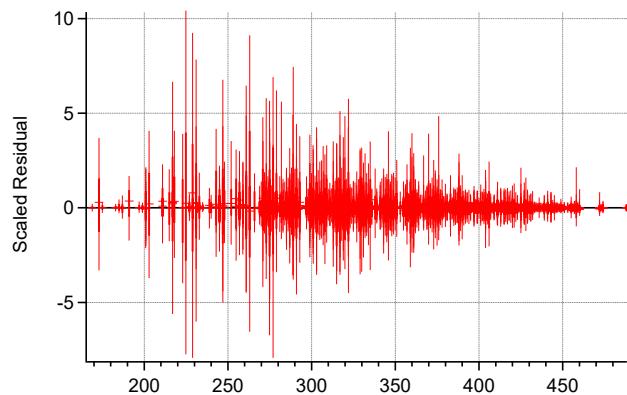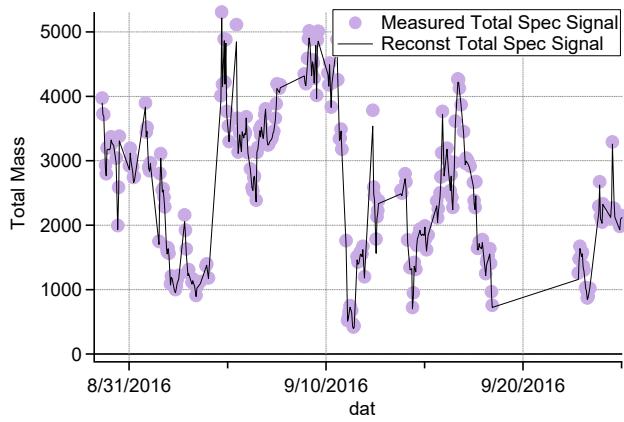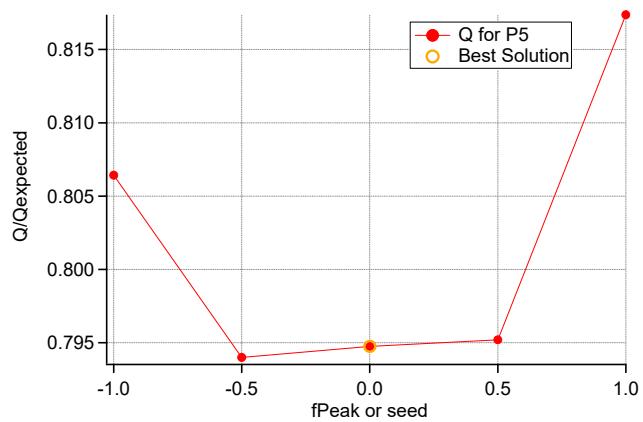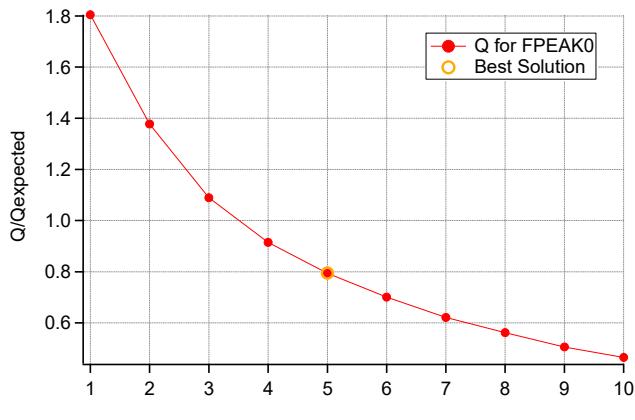
Figure S9 Diagnostic plots of PMF analysis on FIGAERO-CIMS measurements. Note that the input errors estimated from Poisson estimates were increased by a factor of 10 when performing PMF analysis.
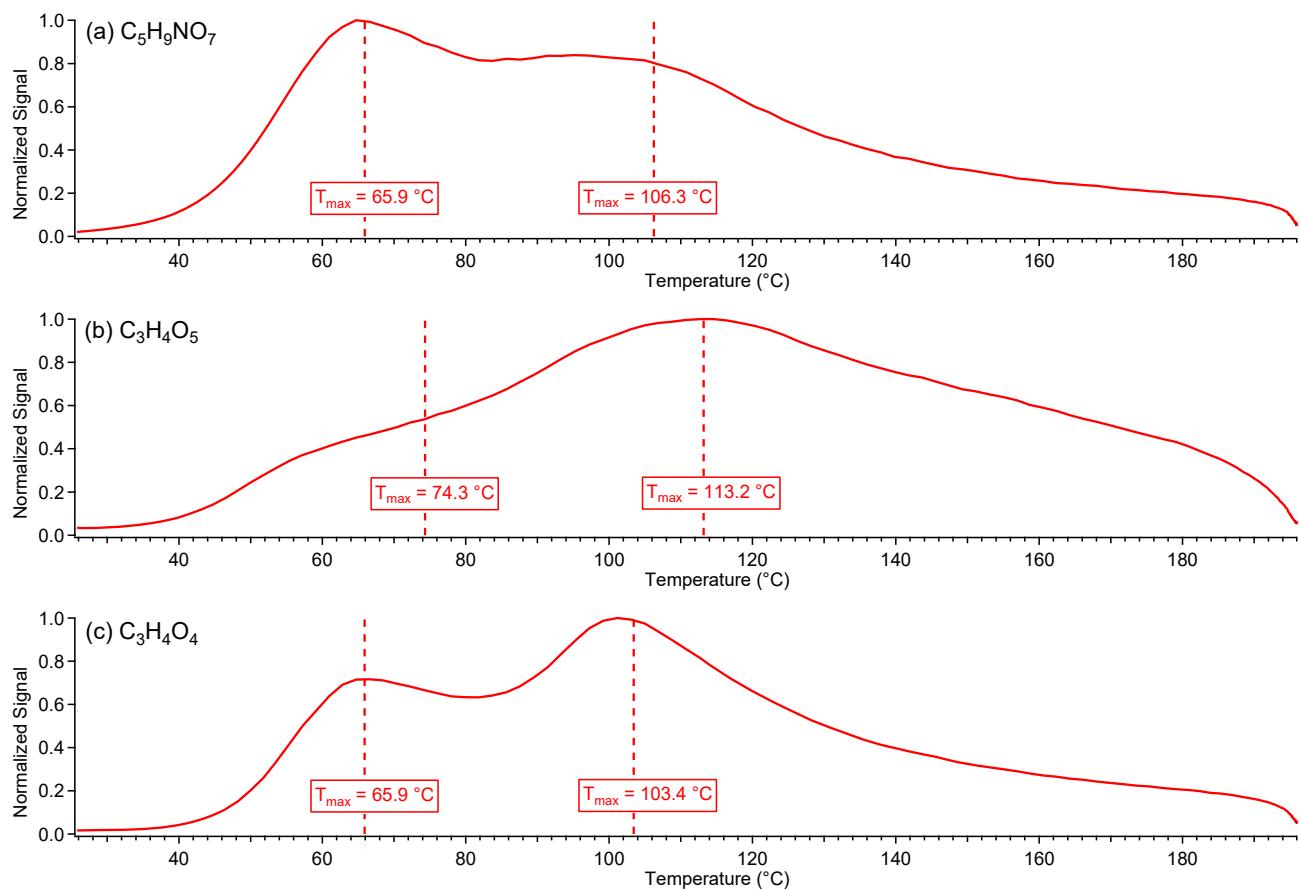
Figure S10 Thermograms of (a) C₅H₉NO₇, (b) C₃H₄O₅, and (c) C₃H₄O₄ ions measured by FIGAERO-CIMS.