

Figure 1. Box and whisker plot showing the 5, 25, 50, 75 and 95th percentiles of the sub $10\ \mu\text{m}$ and sub $100\ \mu\text{m}$ aerosol fRH using the gamma fit at SGP from 2009 to 2015.

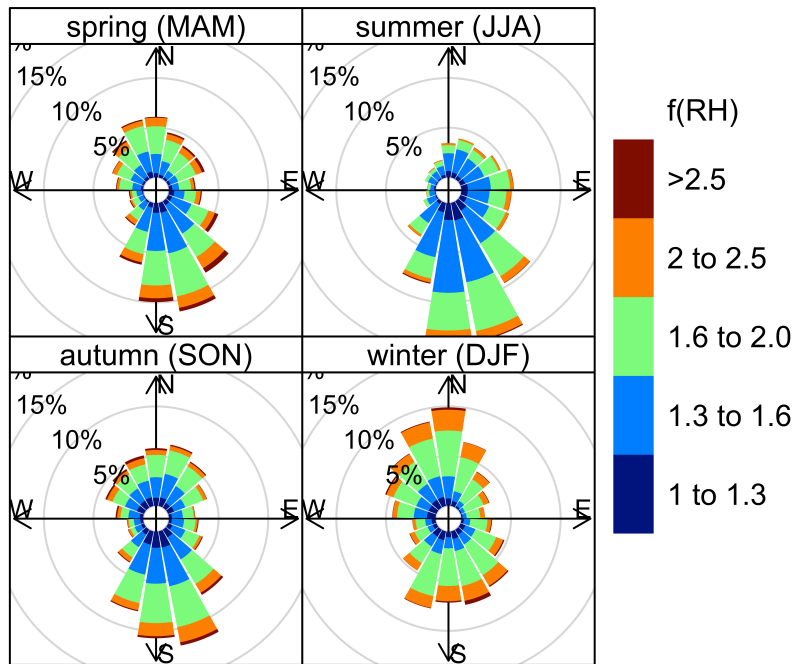


Figure 2. Seasonal wind rose plots depicting seasonal fRH values with wind direction

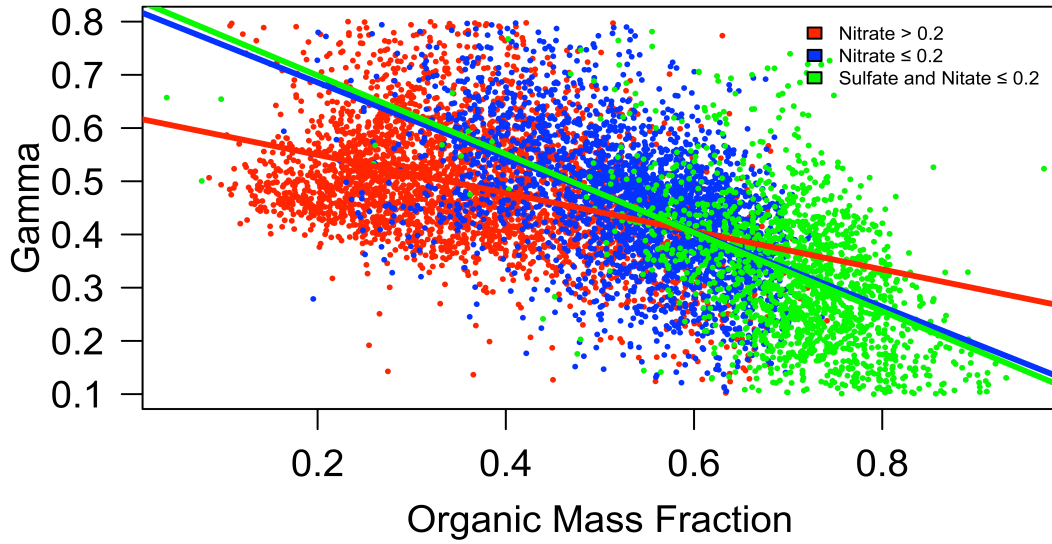


Figure 3. Variation of the gamma fit parameter with aerosol organic mass fraction and colored by nitrate and sulfate mass fraction amounts. Red and blue fit lines correspond to data with similar color. The green fit line is for the entire data set.

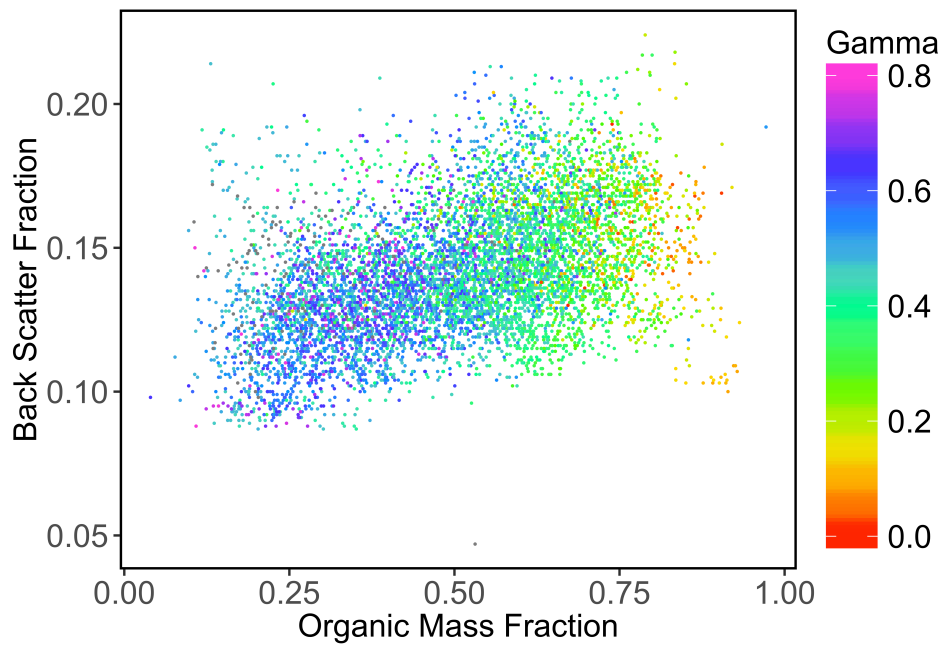


Figure 4. Sub 1 μ m aerosol backscattering fraction at 550 nm vs organic mass fraction from ACSM.

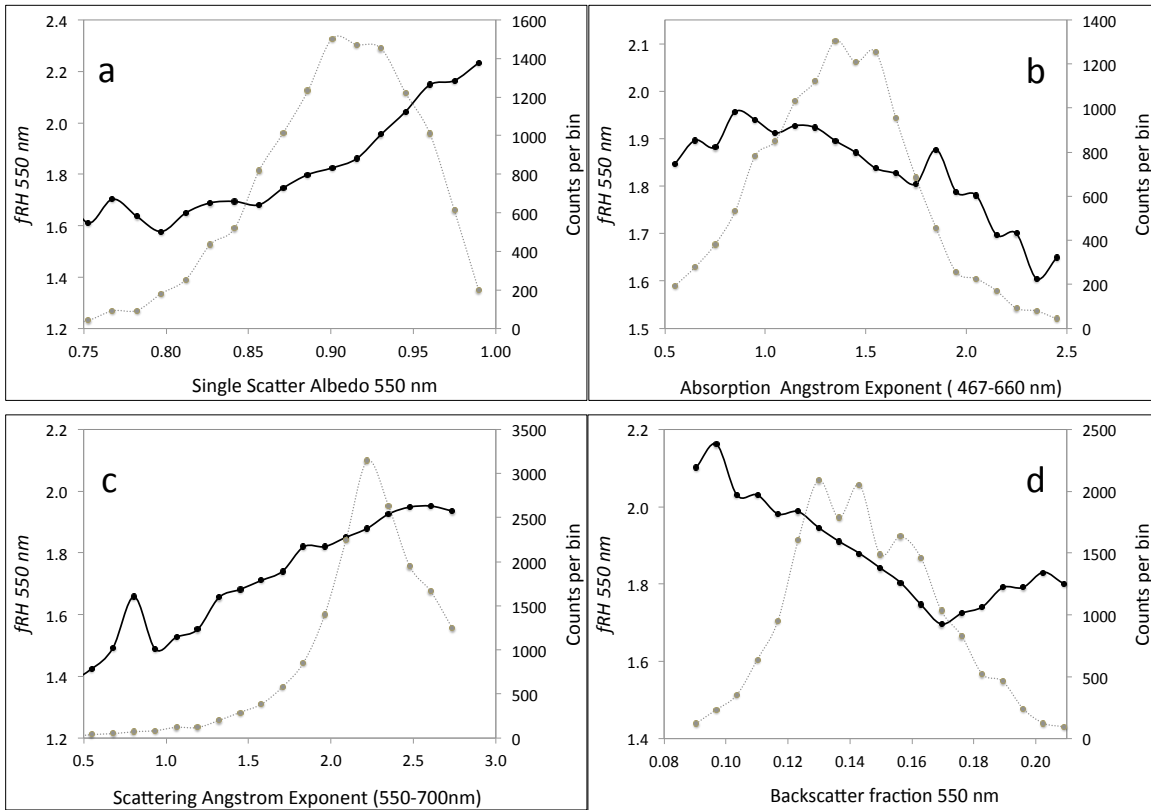


Figure 5. Plots of binned fRH versus dry, intensive, aerosol optical properties (solid line) and the probability distributions of the intensive properties (gray line). Intensive properties are (a) single scatter albedo at 550 nm, (b) absorption Ångstrom exponent for the 467:530 nm wavelength pairs, (c) scattering Ångstrom exponent for the 450:700 nm wavelength pairs, and (d) the backscatter fraction at 550 nm.

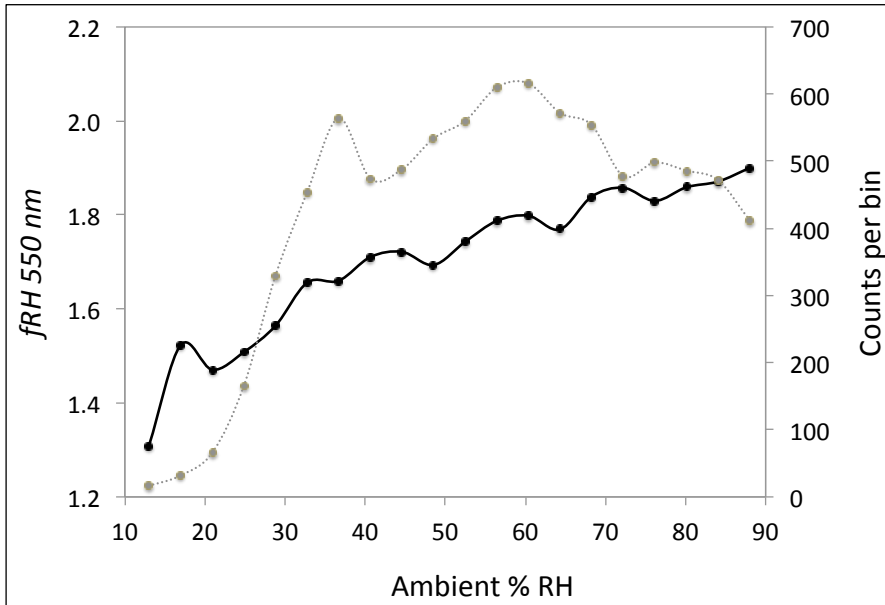


Figure 6. $fRH(85\%/40\%)$ for sub 10 μm data binned by the ambient RH (solid line) and the binned probability distribution of the ambient RH (dashed line).

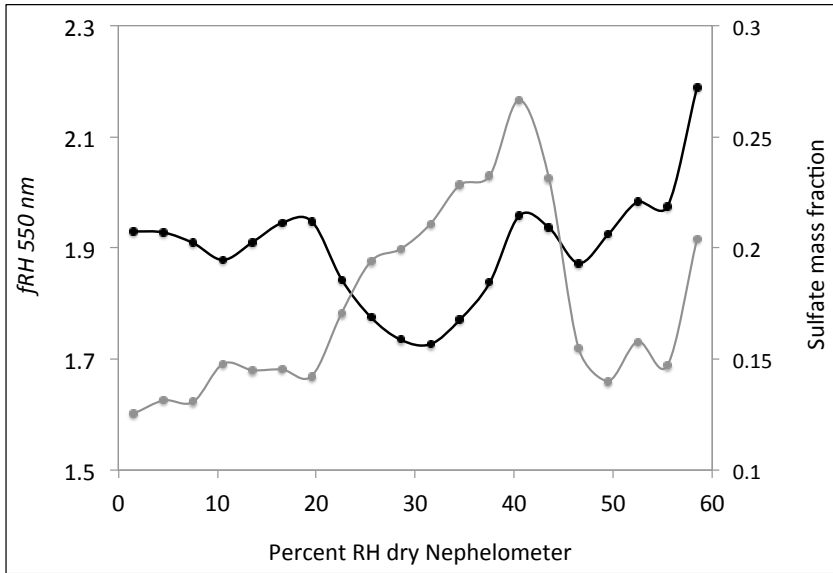


Figure 7. fRH (solid line) and the SMF (gray line) binned by the dry nephelometer RH.

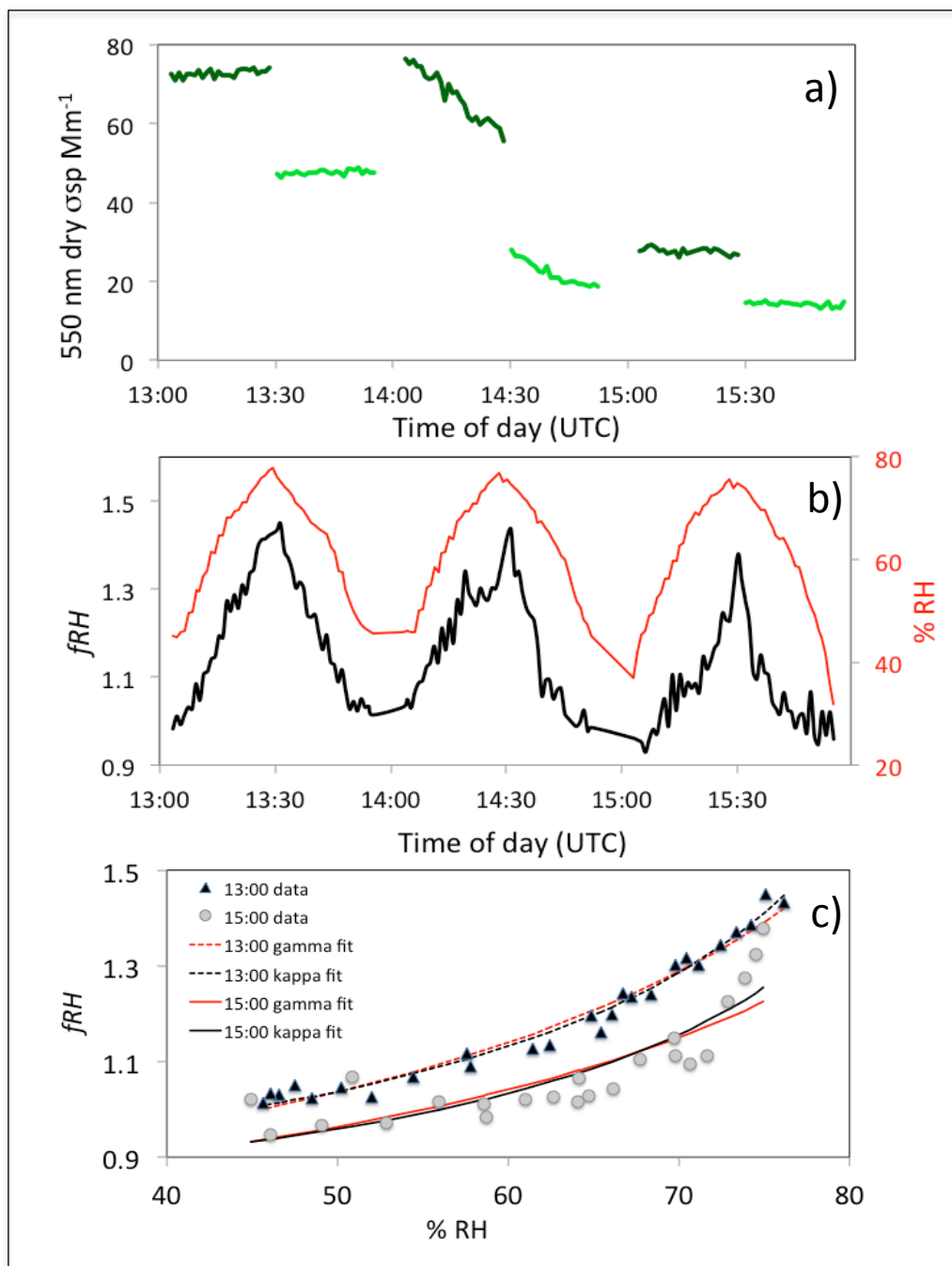


Figure 8. Plots of aerosol scattering data from April 10, 2011 at SGP showing: a) The sub 10 μm (dark green) and sub μm (light green) scattering coefficients at 550 nm., b) ratio of the wet/dry scattering coefficients (black) and humidifier % RH (red), and c) plots of the f_{RH} data fit to the gamma and kappa fit algorithms at 13:00 (black triangles) and at 15:00 (gray circles).

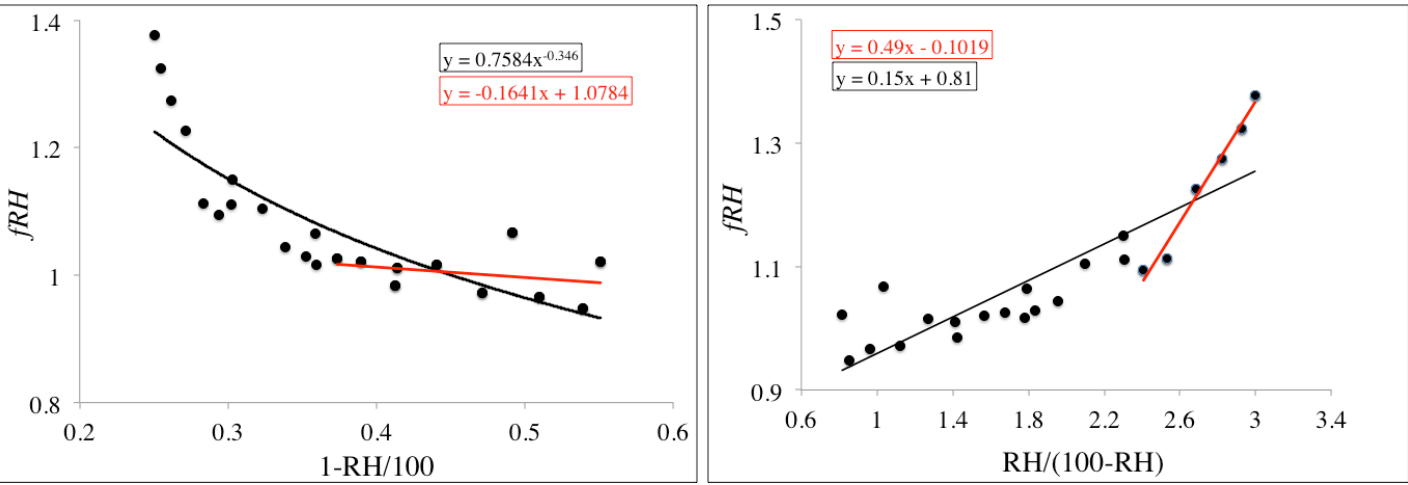


Figure 9. Plots of Gamma (left) and Kappa (right) hygroscopic growth fits. Red lines are linear fits of the data over a limited RH range. Data from sub *um* aerosol scattering coefficients at 550nm on April 10, 2011 at SGP. Fit equation boxes are colored the same as the corresponding fit line.