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Atmospheric Chemistry and Physics Discussions

Supplement of

A multi-year study of lower tropospheric aerosol variability and systematic relationships from four North American regions

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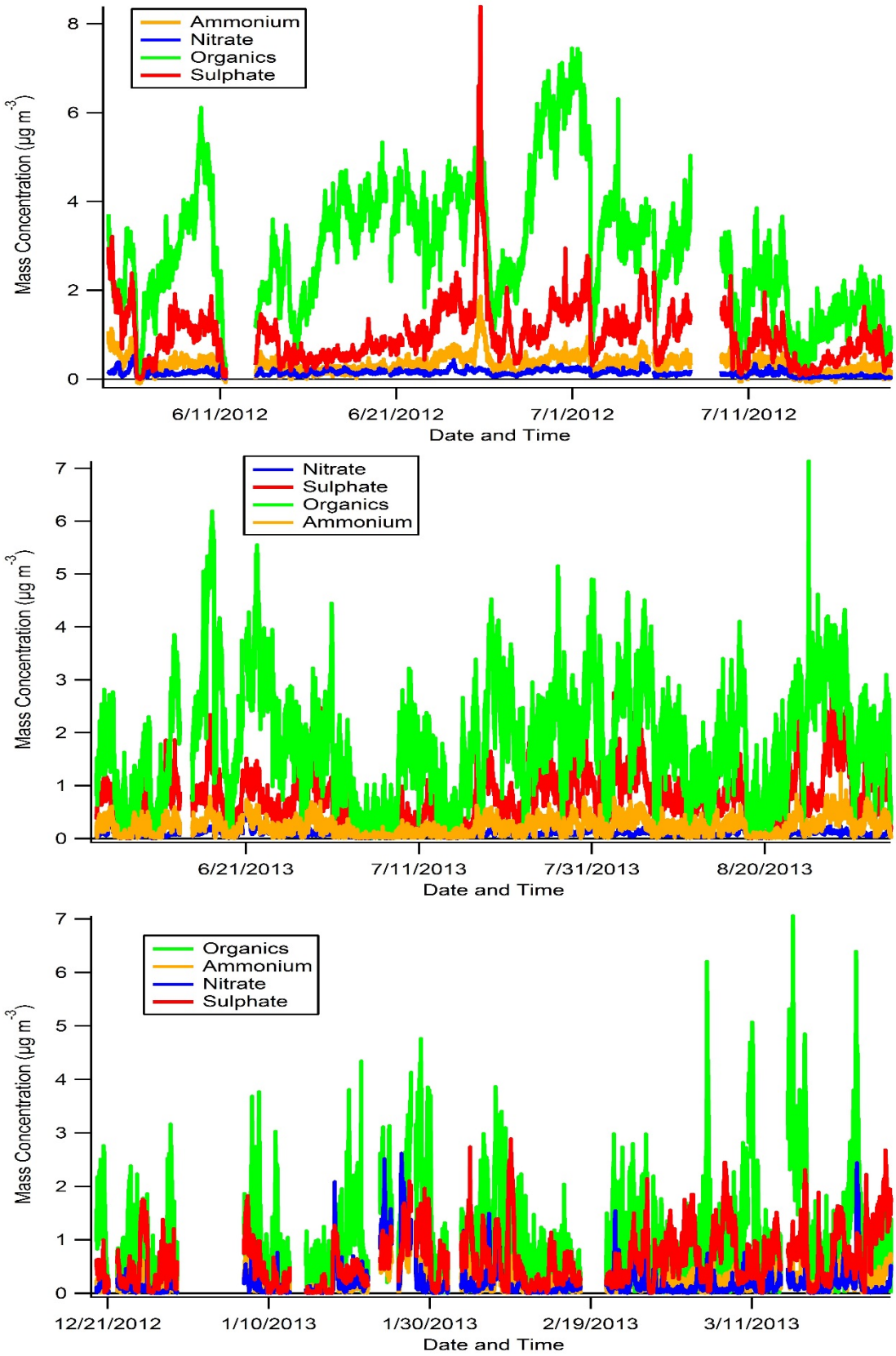

Figure S1: 10-minute averaged mass concentrations of sub-1µm non-refractory aerosol mass concentrations at APP during summer 2012, summer 2013, and winter 2013 by an Aerodyne time-of-flight mass spectrometer (provided by Michael Link)

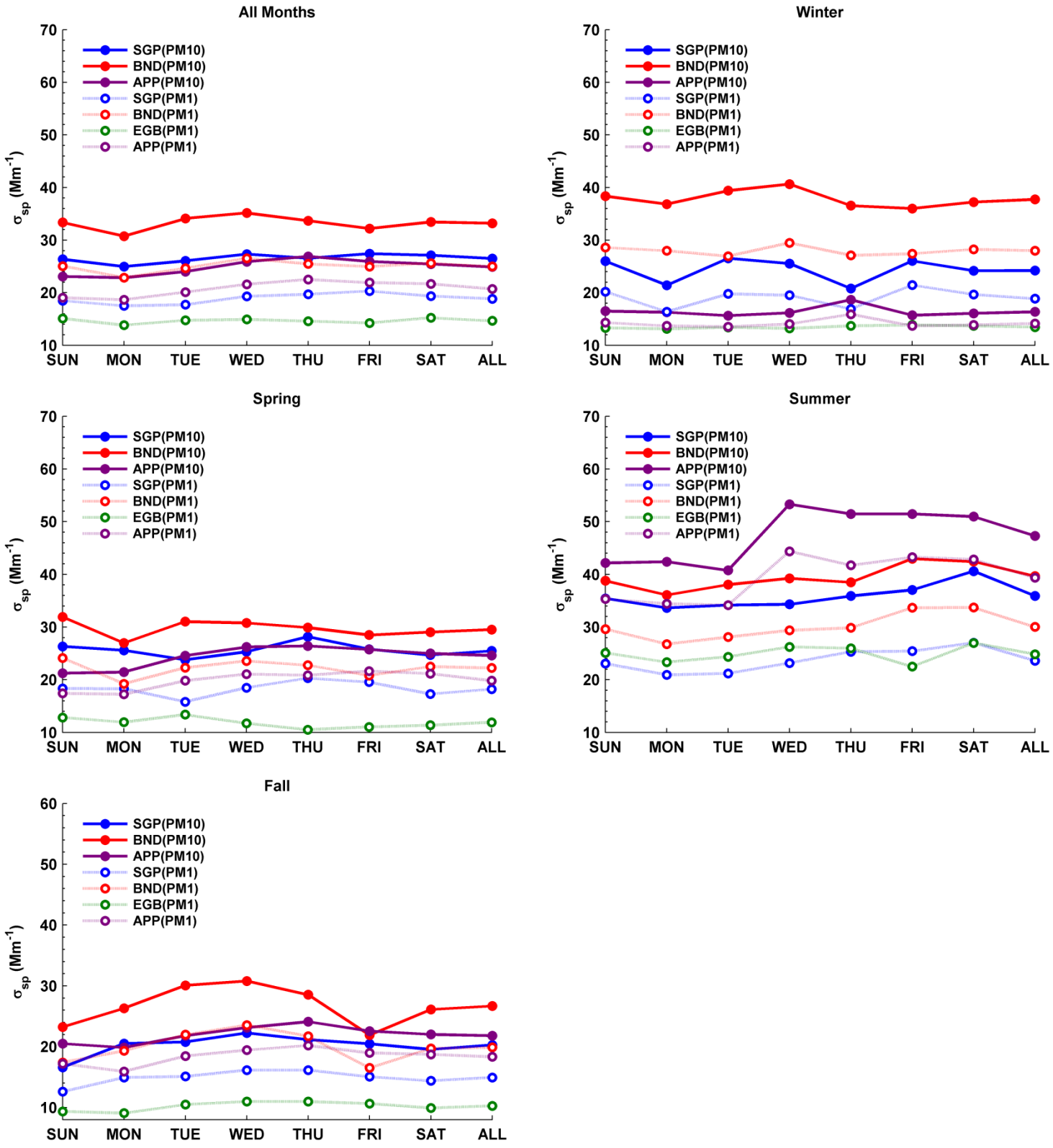

Figure S2: Weekly cycle of median PM10 and PM1aerosol scattering coefficient (σ_{ap}) at 550nm, for all months and broken down by season, for years 2010-2013. Months comprising the seasons are DJF (winter), MAM(spring), JJA(summer), and SON(fall). The medians are based on hourly-averaged values. The values corresponding to 'ALL' are median values over the entire period for that particular season.

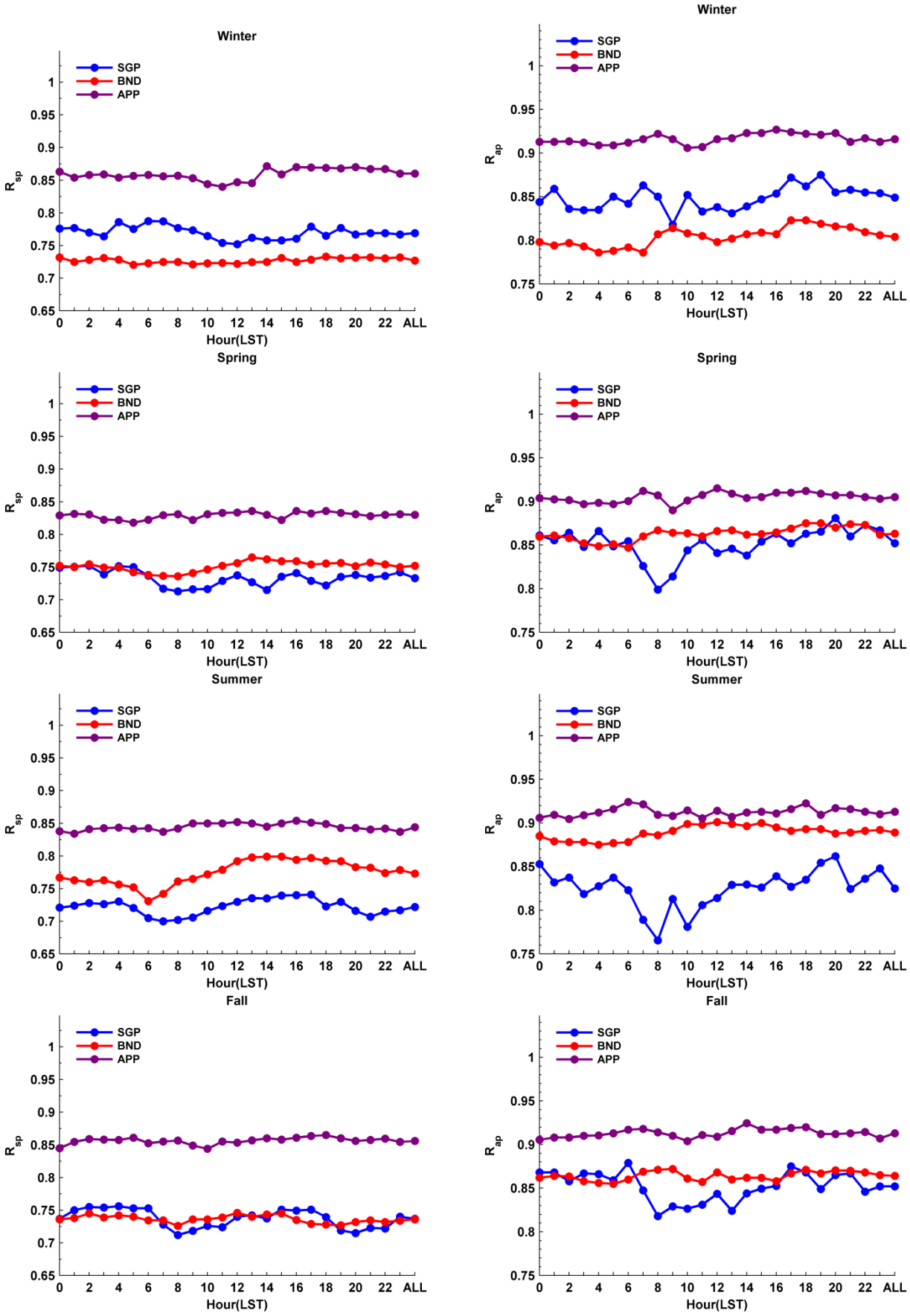

Figure S3: Diurnal cycle of median sub-micrometer aerosol scattering and absorption fractions (R_{sp} and R_{ap}) at 550nm, broken down by individual seasons during the period 2010-2013. Months comprising the seasons are DJF (winter), MAM(spring), JJA(summer), and SON(fall). The values corresponding to 'ALL' are median values over the given seasons for the entire period.

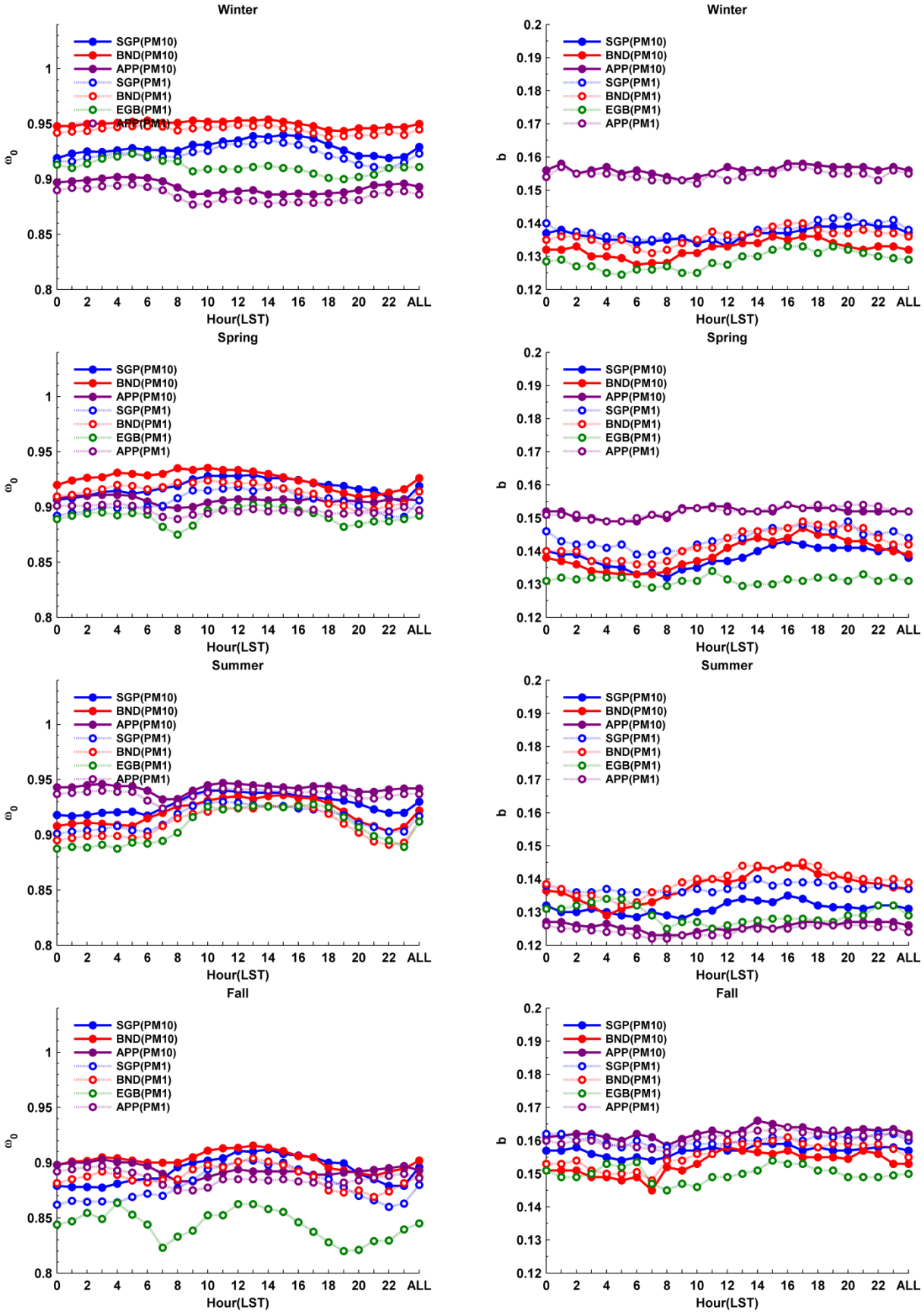

Figure S4: Diurnal cycle of median PM10 and PM1 aerosol single scattering albedo (ω_0) and hemispheric backscatter fraction(b) at 550nm, broken down by individual seasons during the period 2010-2013. Months comprising the seasons are DJF (winter), MAM(spring), JJA(summer), and SON(fall). The values corresponding to 'ALL' are median values over the given seasons for the entire period.

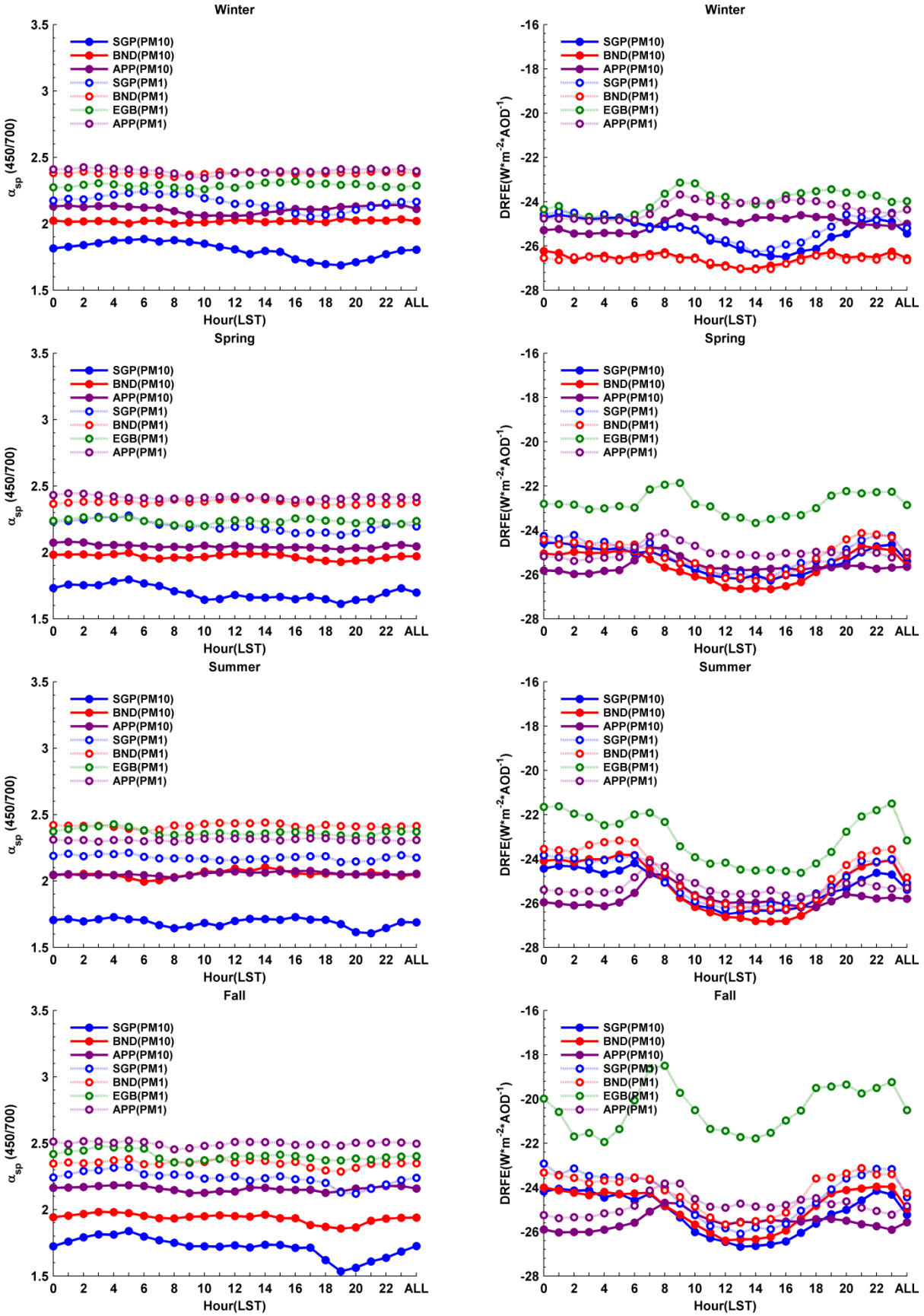

Figure S5: Diurnal cycle of median PM10 and PM1 aerosol scattering Ångström exponent (α_{ap}), using the 450/550nm and 450/700nm pairs, and direct radiative forcing efficiency (DRFE) at 550nm, broken down by individual seasons during the period 2010-2013. Months comprising the seasons are DJF (winter), MAM(spring), JJA(summer), and SON(fall). The values corresponding to 'ALL' are median values over the given seasons for the entire period.

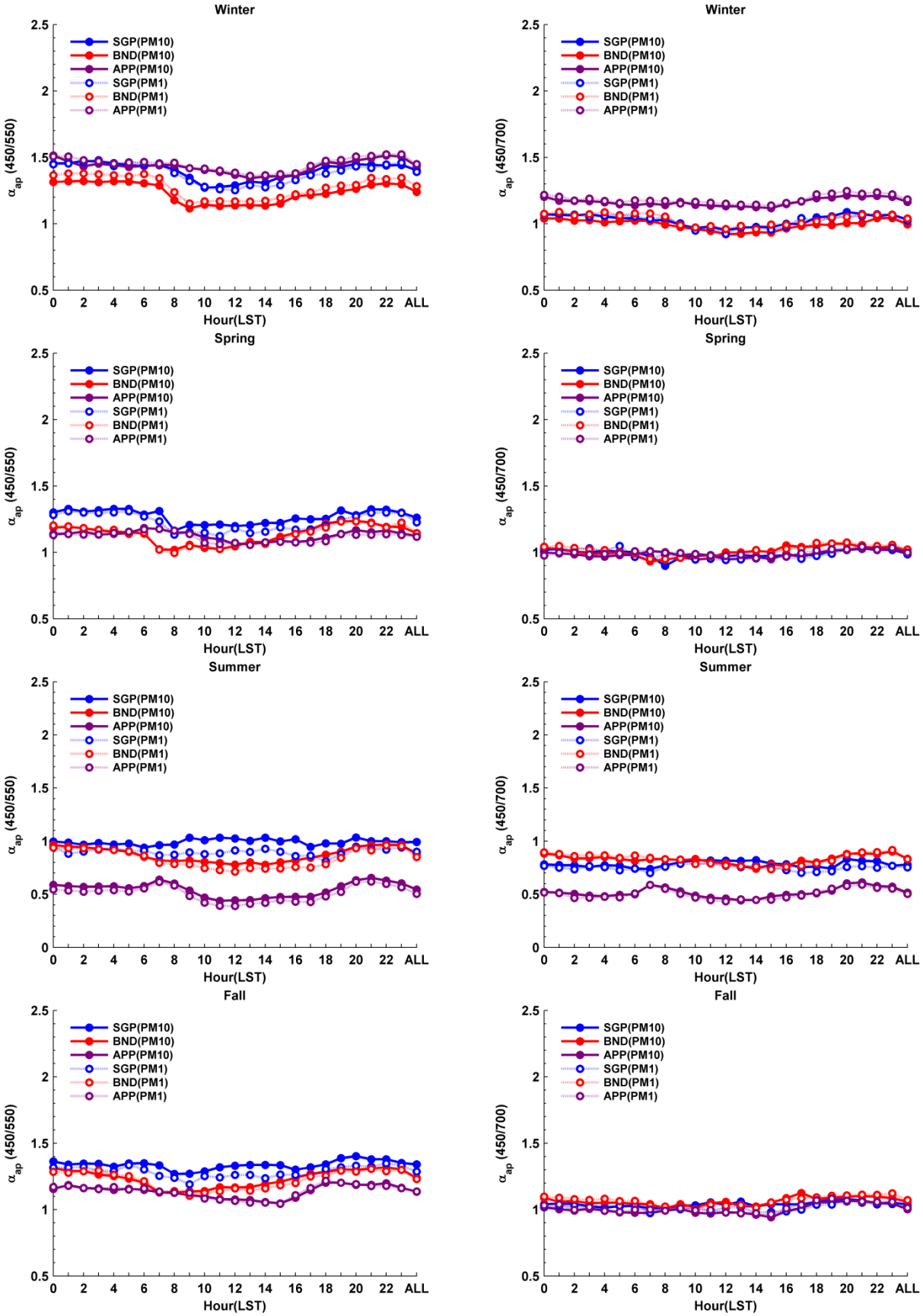

Figure S6: Diurnal cycle of median PM10 and PM1 aerosol absorption Ångström exponents (α_{ap}), using the 450/550nm and 450/700nm, pairs broken down by individual seasons during the period 2010-2013. Months comprising the seasons are DJF (winter), MAM(spring), JJA(summer), and SON(fall). The values corresponding to 'ALL' are median values over the given seasons for the entire period.