**Brief Introduction:**

The BIOMASS BURNING OBSERVATION PROJECT (BBOP) was designed to have observations on aerosols properties to better understanding about aerosols emissions and its uncertainties over the Pacific Northwest (PNW). This field campaign leveraged the capabilities of several instruments having the primary measurements of optical, physical, and chemical properties of aerosols including aerosol extensive and intensive properties. In this exercise, we plan to use light absorption measurements from Particle Soot Absorption Photometer (PSAP) and light scattering measurements from Nephelometer at multiple wavelengths.

**Exercise:**

1. Open the combined data file provided to you using a suitable editor.
2. Look on the columns headers (listed below). Get familiar with the ‘absorption’ and ‘scattering fields’ to the data files
3. See the magnitude of the absorption and scattering coefficients from different wavelengths.
4. How the absorption and scattering coefficients changes with wavelengths.
5. Estimate at least two intensive optical properties from the above data sets
6. Do you see any relationship in RH with scattering coefficients?

**Image and/or data files provided:**

“BBOP\_20130816a\_A2.dat”

Data Column Header (total 17 columns):

Time hh mm ss tbs\_tr\_corr tgs\_tr\_corr trs\_tr\_corr bbs\_tr\_corr bgs\_tr\_corr brs\_tr\_corr tba\_corr tga\_corr tra\_corr neph\_P neph\_T neph\_R F\_cld

Time: Time in UT (decimal)

hh: hour (All Time in UT)

mm: minute

ss: second

tbs\_tr\_corr: Corrected total scattering coefficient at 450nm (Mm^-1)

tgs\_tr\_corr: Corrected total scattering coefficient at 550nm (Mm^-1)

trs\_tr\_corr: Corrected total scattering coefficient at 700nm (Mm^-1)

bbs\_corr: Corrected back scattering coefficient at 450nm (Mm^-1)

bgs\_corr: Corrected back scattering coefficient at 550nm (Mm^-1)

brs\_corr: Corrected back scattering coefficient at 700nm (Mm^-1)

tba\_corr: Corrected absorption coefficient at 461.6 nm (Mm^-1)

tga\_corr: Corrected absorption coefficient at 522.7 nm (Mm^-1)

tra\_corr: Corrected absorption coefficient at 648.3 nm (Mm^-1)

neph\_P: Pressure in Nephelometer (mb)

neph\_T: Temperature in Nephelometer (oC)

neph\_R: Relative Humidity in Nephelometer (%)

F\_cld: Cloud Flag (0 for no clouds)