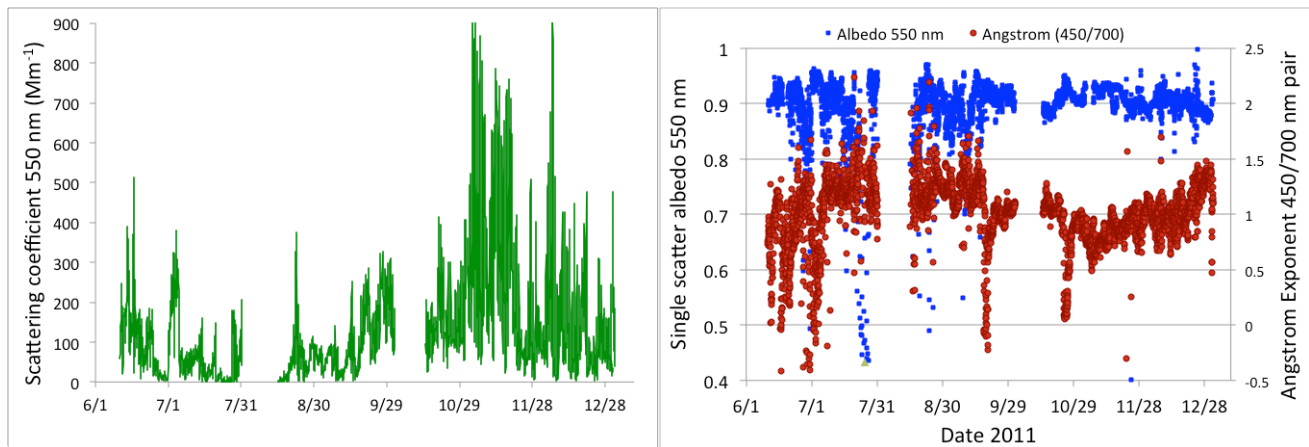


# Aerosol Optical Properties from the Himalayan Foothills Site During Ganges Valley Aerosol Experiment (GVAX)

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Aerosol at the Manora Peak GVAX site emanates from local vegetation, biofuel burning and pollution from the Ganges River Valley as well as long-range transport, especially during downslope periods. Source and seasonal variability of the aerosol optical and cloud-forming properties are presented for the summer monsoon season and fall transition to the dry season. Aerosol loading has a seasonal low during the summer with an average Jun-Aug aerosol scattering coefficient at 550 nm of  $74 \text{ Mm}^{-1}$  and a mid September to mid November average value of  $205 \text{ Mm}^{-1}$ . As evidenced by changes in the aerosol single scatter albedo and Ångström exponent the aerosol is slightly smaller and darker during the summer and may reflect wet scavenging of larger, more hygroscopic aerosol. A strong diurnal trend is apparent with higher loading around solar noon. The most remarkable feature of the GVAX aerosol during both seasons is its relatively large size. The average Ångström exponent for the 450/700 nm wavelengths is  $\sim 1.0$ . The large size persists through both seasons and during upslope and downslope conditions.



**Figure 1.** The aerosol scattering coefficient at 550 nm (left) and the aerosol single scatter albedo and Ångström Exponent at 550 nm (right) from June to December 2011 from Nainital, India.