

scattering cross-section, σ_{scat}

The scattering coefficient per particle ($\text{cm}^2/\text{particle}$); $b_{\text{scat}} = n\sigma_{\text{scat}}$ where n is the number concentration of particles (particles cm^{-3}) and σ_{scat} is the scattering cross-section. b_{scat} , the scattering component of extinction due to gas and particles, is measured in the atmosphere using a nephelometer. For a homogeneous atmosphere it is related in theory to the meteorological range (L_v): $L_v = 3.9/b_{\text{scat}}$; b_{scat} and b_{abs} represent the scattering and absorption coefficients per unit length for a light beam (of path length L) which has a spectral radiance (intensity) I_0 incident on a sample of air and I is the transmitted spectral radiance (intensity), $\ln(I_0/I) = L(b_{\text{scat}} + b_{\text{abs}})$.
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