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scattering cross-section, σ_{scat}

The scattering coefficient per particle ($\frac{cm^2}{particle}$);

$$b_{scat} = n\,\sigma_{scat}$$

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): $L_V = \frac{3.9}{b_{scat}}$; 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), $\ln\left(\frac{I_0}{I}\right) = L\,(b_{scat} + b_{abs})$.

Source:
PAC, 1990, *62*, 2167 *(Glossary of atmospheric chemistry terms (Recommendations 1990))* on page 2212

