5.3: Scattering, Extinction and Opacity

If the predominating mechanism is scattering with no absorption, we can define in a similar manner linear, atomic and mass scattering coefficients, using the symbol σ rather than α. For the physical distinction between absorption and scattering, see Section 5.1. And if both absorption and scattering are important, we can define linear, atomic and mass extinction coefficients, using the symbol κ, where

$$\kappa = \alpha + \sigma. \tag{5.3.1}$$

All the foregoing equations are valid, whether we use linear, atomic or mass absorption, scattering or extinction coefficients, and whether we refer to radiation integrated over all frequencies or whether at a particular wavelength or within a specified wavelength range.

The *mass extinction coefficient* is generally referred to as the *opacity*.