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## Scattering of electromagnetic radiation

**Sections:** [Inelastic scattering](#); [Brillouin and Rayleigh scattering](#); [Large particles](#); [Critical opalescence](#); [Nonlinear scattering](#)

The process in which energy is removed from a beam of electromagnetic radiation and reemitted with a change in direction, phase, or wavelength. All electromagnetic radiation is subject to scattering by the medium (gas, liquid, or solid) through which it passes. In the short-wavelength, high-energy regime in which electromagnetic radiation is most easily discussed by means of a particle description, these processes are termed photon scattering. At slightly longer wavelengths, the scattering of x-rays provides the most effective means of determining the structure of crystalline solids. In the visible wavelength region, scattering of light produces the blue sky, red sunsets, and white clouds. At longer wavelengths, scattering of radio waves determines their characteristics as they pass through the atmosphere. See also: [Light](#); [Meteorological optics](#); [Radio-wave propagation](#)

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