Atmospheric aerosols are small (microscopic) particles in suspension in the atmosphere, which play multiple roles in the climate system. They interact with the energy budget through scattering and absorption of solar and terrestrial radiation. They also serve as cloud condensation and ice nuclei with impacts on the formation, evolution and properties of clouds. Finally aerosols also interact with some biogeochemical cycles. Anthropogenic emissions of aerosols are responsible for a cooling effect that has masked part of the warming due to the increased greenhouse effect since pre-industrial time. Natural aerosols also respond to climate changes as shown by observations of past climates and modelling of the future climate.