

Atmospheric aerosol is a suspension of liquid or solid particles or their mixture in the atmosphere. Tropospheric aerosols can get into the air from its natural sources or from anthropogenic sources. Release of carbon dioxide from burning fossil fuels and organic and elemental carbon from biomass burning are the major anthropogenic sources of aerosols. Primary aerosols have a direct source of emissions (dust from quarries or from land, sea salt particles in the waves, volcanic ash during volcanic eruptions). Secondary aerosols are formed by chemical reactions of substances in the atmosphere, which converts the gas particles - so-called conversion of gases to particles (formation of nitrates by oxidation of nitrogen oxides and sulfates from sulfur dioxide).

Atmospheric aerosol is an important component of the atmosphere and contributes to significant atmospheric events, such as precipitation formation and precipitation fall, radiation balance of Earth. Aerosols can affect the radiation balance of the Earth in two ways. First, through absorption and scattering of shortwave and long wave radiation - so-called direct effect. Or serve as condensation nuclei on which water is condenses. Aerosols can affect formation, quantity, length of existence and radiation properties of clouds - so-called indirect effect.

In my bachelor thesis, I focused on the mechanisms by which aerosols affect the radiation balance of Earth. Of present knowledge suggests that the direct radiation effect is cooling. Indirect effect is still unclear, but probably also leads to cooling of the earth's surface. It is clear that aerosols play an important role in the global climate system.