

# ATMOSPHERIC AEROSOLS

These are fine particles suspended in the atmosphere. Their size is in the micrometer range. Their life in the atmosphere is of the order of 1 to 2 weeks in the troposphere (the lower part of the atmosphere) and 1 to 2 years in the stratosphere (the upper part of the atmosphere).

## SOURCE OF AEROSOLS

There are many types of aerosols.

Some are natural, such as:



Desert dust

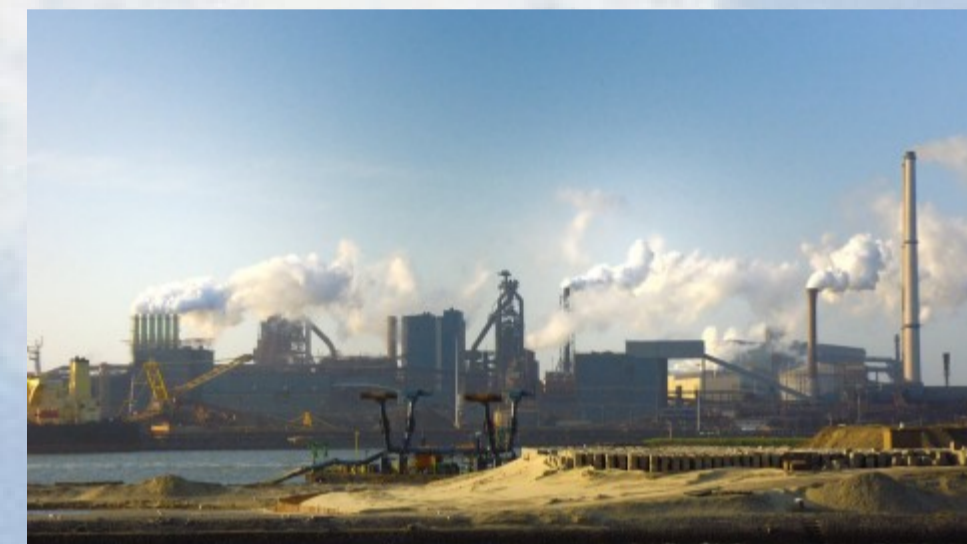


Volcanic ashes



Smoke from fires

Some are of anthropogenic origin such as:



Factory emissions



Vehicle exhaust



Aircraft contrails

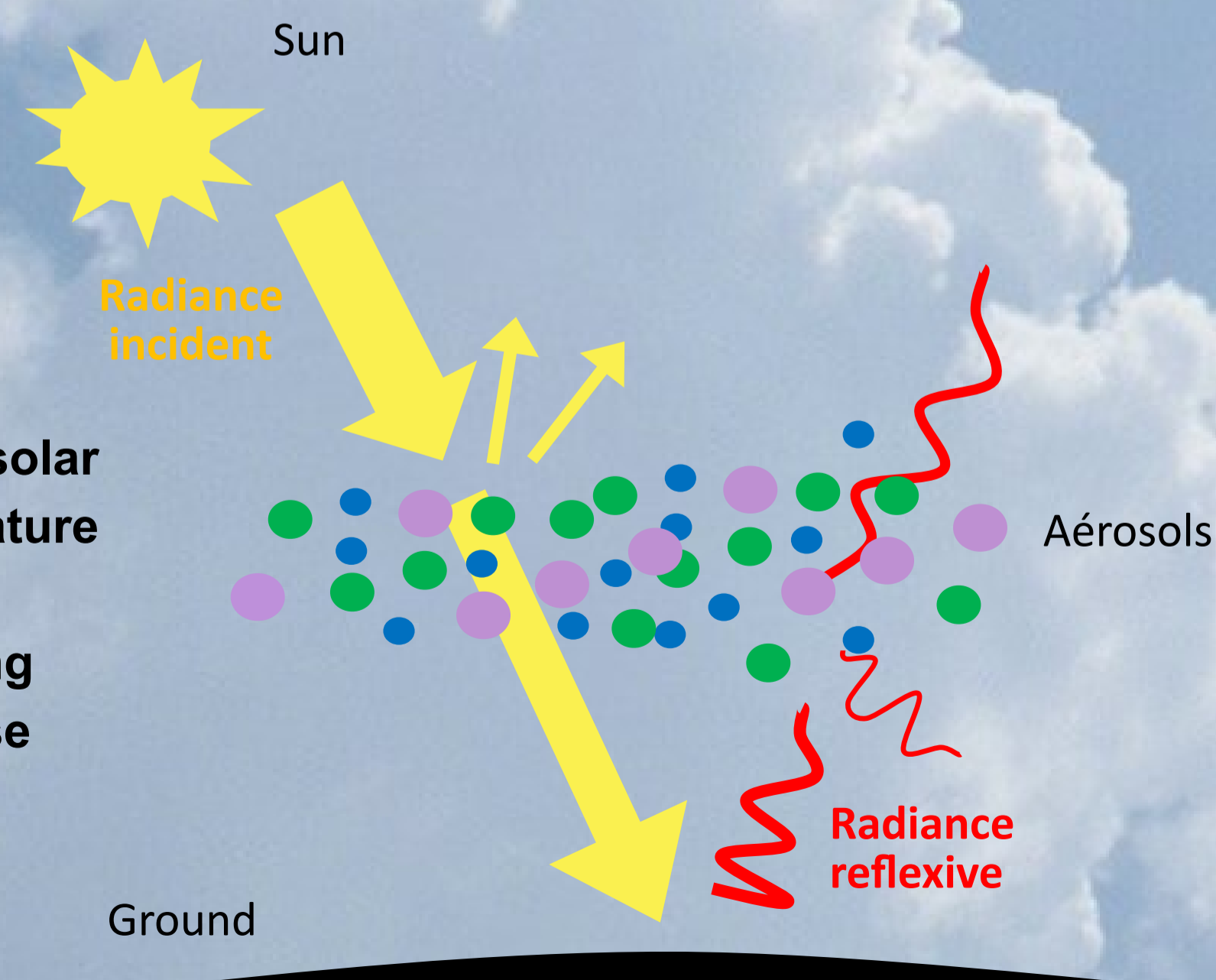
## IMPACTS of AEROSOLS IN THE ATMOSPHERE

Aerosols affect Earth's radiation balance

Direct effect : By absorption and / or diffusion of part of the solar and terrestrial radiation

Aerosols reflect some solar radiation, surface temperature decreases.

It partially masks the warming due to increasing greenhouse Gases.

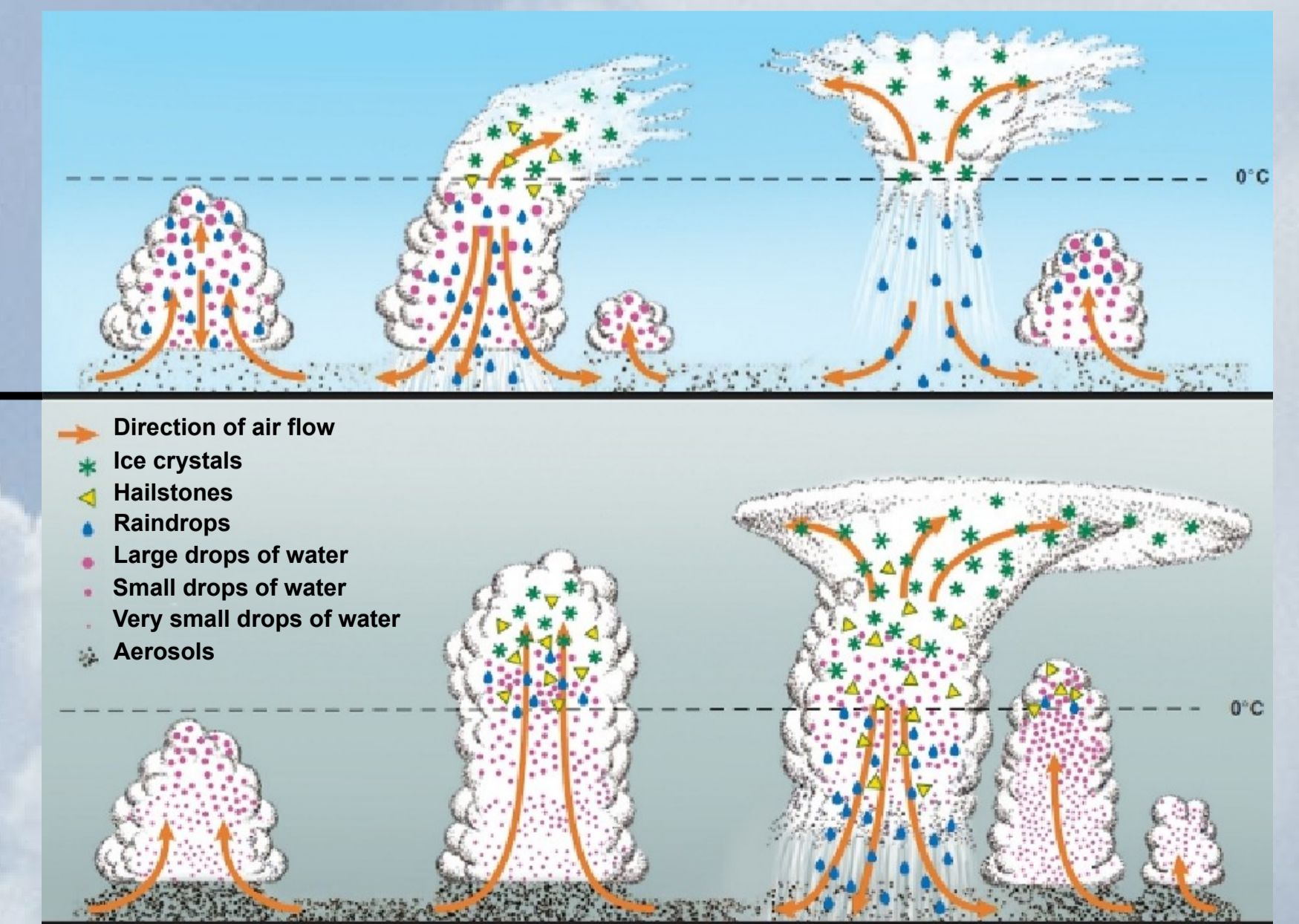


Indirect effect : Aerosols are involved in the formation of clouds

Training precipitating clouds

In slightly polluted environment

In a polluted environment and rich aerosols. The height of the cloud is more important and more intense precipitation.



© Rosenfeld et al. 2008 - Science