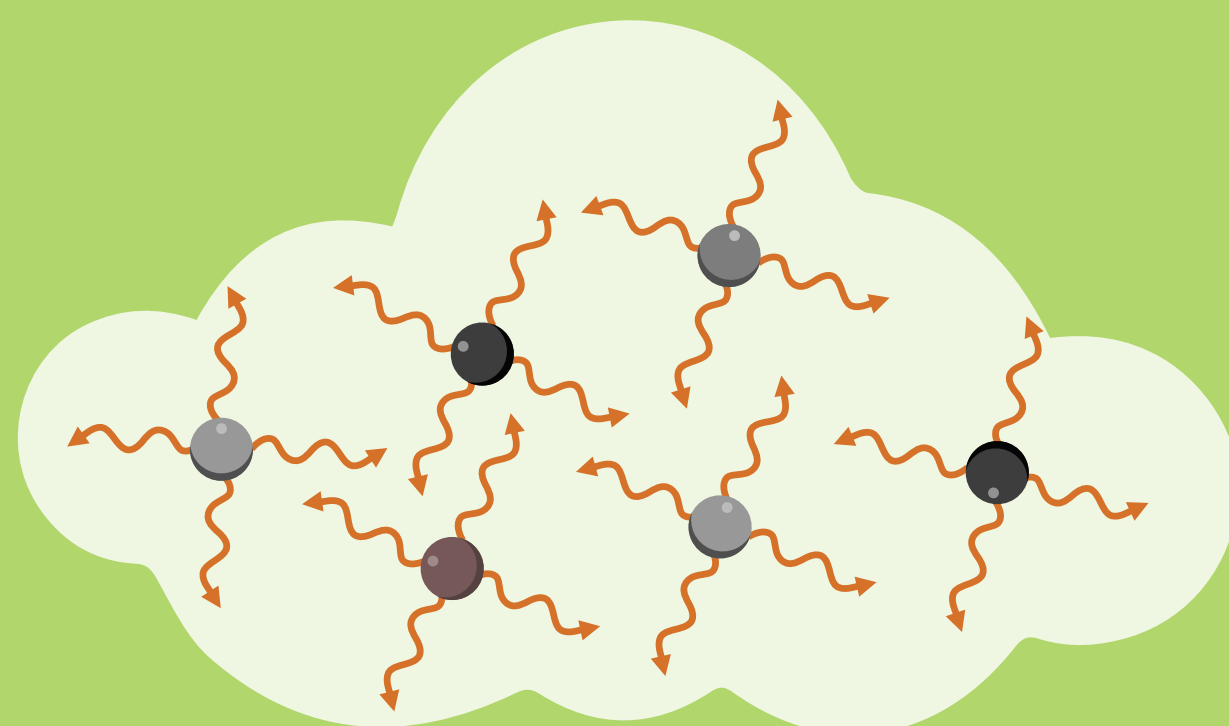


# How Aerosols and Brown Carbon Interact with Light

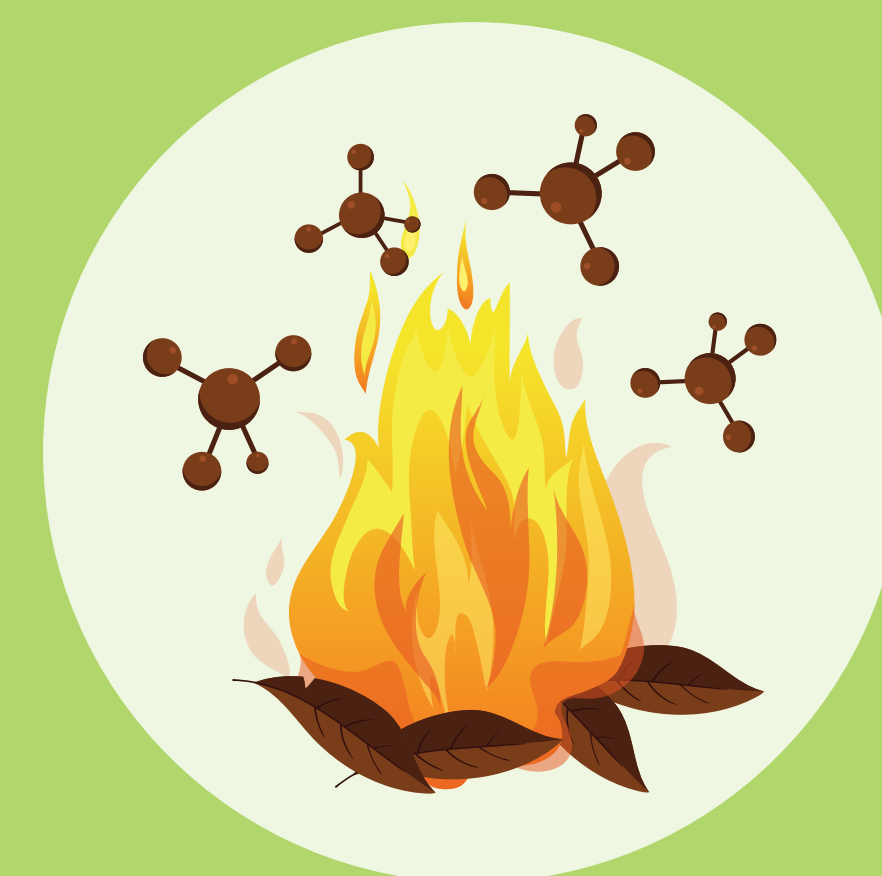
Environmental  
Science:  
Atmospheres



Aerosols in the atmosphere absorb and scatter light, affecting the radiative budget and atmospheric photochemistry



The abundance of brown carbon (BrC), an organic aerosol related to vehicle exhaust and biomass burning, makes it crucial to investigate aerosol properties

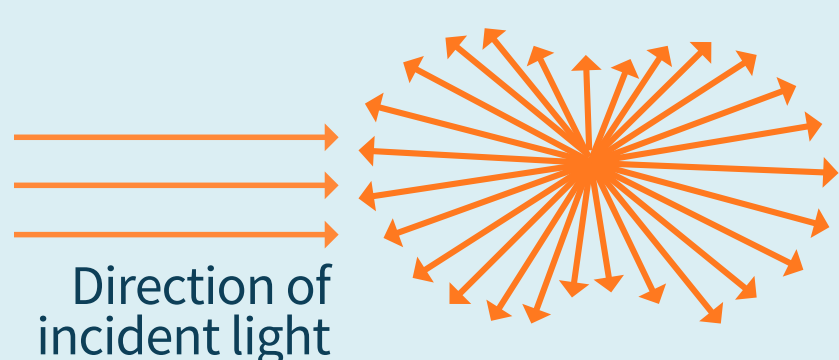
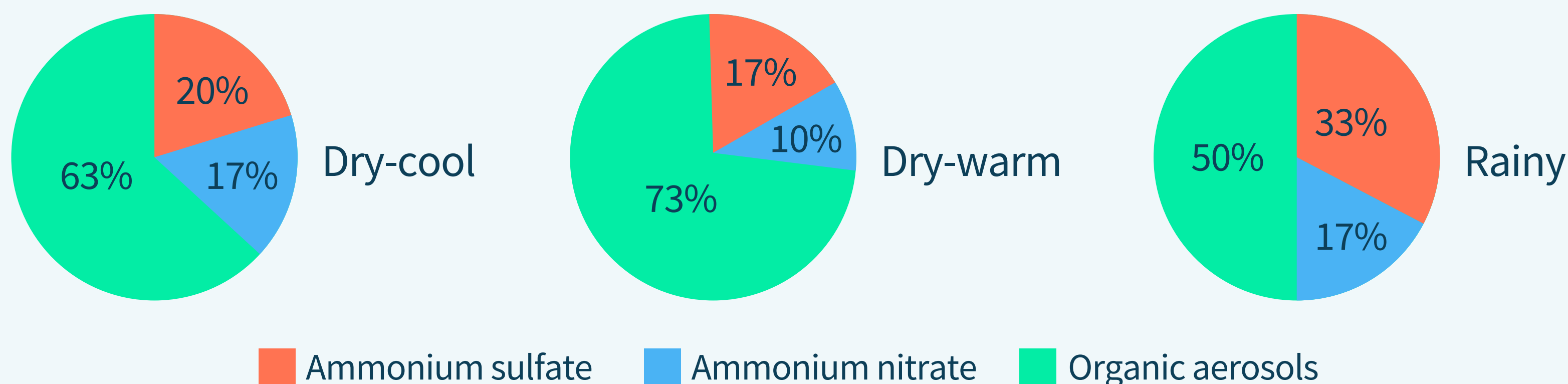


## Daily and seasonal variations in the optical properties of BrC and aerosols in Mexico City were investigated

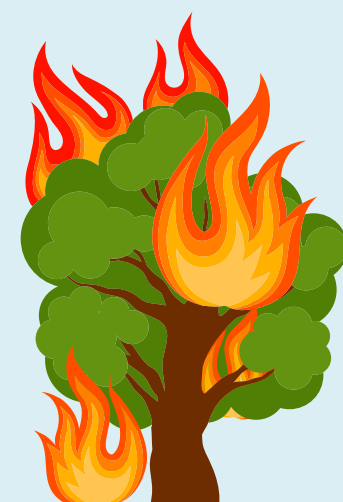
2017

2019

### Scattering contribution



65%–74% of light extinction occurs due to scattering



Scattering contribution of organic aerosols goes up to 80% during wildfire episodes

- ✓ Organic aerosols dominate both submicron mass loading (62%) and light scattering
- ✓ Vehicular emissions are the dominant daily contributors to BrC light absorption
- ✓ Biomass burning contributes to BrC absorption majorly during wildfires

Understanding the optical and chemical properties of aerosols is imperative to improve air quality and mitigate climate change