# Aerosols

Aerosols in CAM-Chem are represented using the 4-mode version of the modal aerosol model (MAM-4) from Lui et al., 2016. Background and a description of the basic aerosol model performance can be found in Liu et al., 2012. The species that are included in the base chemical mechanism are:

- Black Carbon
- Primary Organic Matter
- Sulfate
- Dust
- Sea Salt
- Secondary Organic Aerosol

Secondary organic aerosol is treated using a volatility basis set (VBS) scheme derived from Hodzic et al., 2015, including updates to the chemical reaction rates from GECKO-A. The release version of CESM 2.0 also includes diagnostics for surface $PM_{2.5}$ and three dimensional fields of $PM_{2.5}$.

Currently in development for release are the inclusion of ammonium and nitrate aerosols, along with their aqueous-phase heterogenous chemical reactions following the MOSAIC scheme combined with MAM4.