

Available Input Datasets

Emissions

One of the most common modifications to CAM-chem is the selection of different emissions to use in simulations. The standard configuration of MUSICA-V0 includes anthropogenic emissions from CAMS and biomass burning emissions from FINNv1.5.

Other choices of emissions inventories are listed on the [CAM-chem wiki](#). When considering other inventories be sure the native resolution is finer than the 1/8th degree resolution used over CONUS in order to achieve the full benefit of running simulations at the fine resolution.

Emissions are available for regridding for these years:

- FINN global daily fire emissions are for 2002-2019 (original resolution 1km)
- QFED global daily fire emissions are for 2000-2019 (original resolution 0.25 or 0.1 degree)
- CAMS global anthropogenic emissions are available for 2000-2020 (original resolution 0.1 degree)
- NEI emissions are available only for the year 2014 for the U.S.
- CMIP6 global standard historical emissions are available between 1750 and 2014. SSP emissions are available for 2015-2100. (original resolution 0.5 degree)

Programs for regridding emissions are provided on the MUSICA [Input data Processing Tools](#) page.

Emissions for several grids (ne30, ne0conus, etc.) are on derecho in [/glade/campaign/acom/acom-weather/MUSICA/emissions/](#) (will be moved soon to: [/glade/campaign/acom/MUSICA/emissions/](#)).

Meteorological Analysis

To run the model with observed temperatures and wind fields, meteorological analysis for example from GEOS5 and MERRA2 can be used to nudge the model. Meteorological input data on their original horizontal and vertical resolution of 0.25 deg. (GEOS5) and 0.5 deg (MERRA2) every three hours have been processed: GEOS5: <https://rda.ucar.edu/datasets/ds313.0/> and MERRA2: <https://rda.ucar.edu/datasets/ds313.3/>

These data have to be interpolated to the horizontal resolution of the model configurations. Processing tools to do this are here: [Input data Processing Tools](#)

Met-data are also available for specific years and resolution on cheyenne: [/glade/p/acom/MUSICA/met_data/](#).

Initial Conditions

Initial conditions files at ne30 resolution, suitable for regridding to MUSICA-V0 grids, are in: [/glade/campaign/acom/acom-weather/MUSICA/init/ne30_ne30/](#) (will move soon to [/glade/campaign/acom/MUSICA/](#)).

Globus access: https://app.globus.org/file-manager?origin_id=6966cf6f-f0ec-49a0-af10-52909dced4c4&origin_path=%2F