

Scientifically validated CLM configurations in CESM1.2:

- CLM4.5SP Satellite phenology with new biogeophys
- CLM4.5BGC New biogeophys + CENTURY-like vertically resolved soil BGC + CH₄ emissions, nitrogen updates
- CLM4.5CN New biogeophys + CN soil BGC, nitrogen
- CLM4SP As in CCSM4/CESM1 release
- CLM4CN As in CCSM4/CESM1 release

Functionally supported options/configurations:

- CROP can be activated for all CLM4 and CLM4.5 biogeochemistry configurations
- IRRIGATION only works with CROP active in CLM4.5; IRRIGATION only works for unmanaged crops in CLM4
- DV (Dynamic Global Vegetation) can be activated for CLM4 and CLM4.5 biogeochemistry configurations as long as transient land cover dataset is not set (i.e., `fpftdyn = ' '`)
- VIC (Variable Infiltration Capacity)-based hydrology can be activated for any CLM4.5 configuration
- GLCMEC (multiple glacier elevation classes for coupling to CISM) can be activated in combination with any other option for f09, f19 or T31 resolutions

Resolution

- CLM standard resolutions are 0.9°x1.25°, 0.5°, 1.9°x2.5°, and ne30
- RTM standard resolution is 0.5°; a 0.1° resolution version is functionally supported
- CLM standard vertical resolution is 15 layers, but a 30-layer version (`more_vert_layers=.true.`) is functionally supported with increased number of layers between 1m and 3m

Atmospheric forcing datasets

- CRUNCEP (1901-2010) – Viovy, <http://dods.extra.cea.fr/data/p529viov/cruncep/readme.htm>
- Qian (1948-2004) – Qian et al. (2006)