

Surface energy balance and climatology changes from WRF simulations with different horizontal resolutions and soil configurations



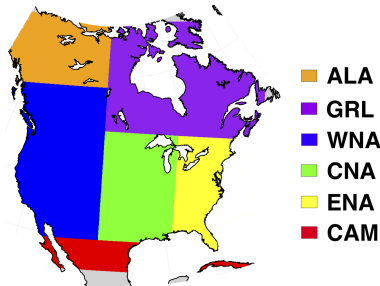
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Objective:

Understand and compare the effects of changing resolution and the land surface model (LSM) on the near-surface climate simulation.

WRF Model Experiment:

- 12 Simulations 1980-2013 over North America.
- 3 Resolutions: 100km, 50km, 25km.
- 3 LSMs: CLM4, NOAH, NOAH-MP.
- Vegetation Mode: Prescribed (-) and dynamic vegetation (DV).



Conclusions:

The LSM choice plays a crucial role in the simulation of maximum and minimum temperatures, due to differences in the simulation of surface radiation. The use of finer horizontal resolutions leads to higher precipitation, particularly at mid-low latitudes, due to an increase in latent heat flux.

Results: Mean bias in WRF experiments relative to the CRU.

