DART provides both state-of-the-art ensemble data assimilation capabilities and a wide range of observation types including:

- Meteorological observations, e.g. WRF, COAMPS, COSMO, MPAS Atmosphere, weather models, e.g. WRF, COAMPS, COSMO, MPAS Atmosphere
- Oceanic observations, e.g. WACCM, MITgcm-Ocean, GCCOM, ROMS, JULES, FESOM, CICE
- Atmospheric chemistry models, e.g. CAM-CHEM, WRF-CHEM
- Thermodynamic models, e.g. EOS-90, EOS-91F
- Oceanic models, e.g. MIT-WOD, MOCASS
- Atmospheric models, e.g. MAM-J/CAM, MOCASS

Some computational resources were provided by the National Science Foundation.

DART has been used to assimilate a wide range of observations, including:

- Satellite data
- Ground-based observations
- airborne observations

This points to the existence of model defects which should be fixed.

The ability of the refined mesh forecasts to better represent the observations, which have a scale limitation, is an important consideration. The forecasts are verified against the CONUS region of the NCEP final operational model (anomaly product) and the reanalysis data. The results show that the refined mesh forecasts are able to better represent the observations, which have a scale limitation, than the coarser mesh forecasts.

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