

Recent upgrades and developments in the use of satellite radiances at ECCO

Operational systems:

- Global System and High-Resolution National System (4D-EnVAR)
- Global Ensemble System (LETKF)

Key Updates:

- Adoption of RTTOV v13 and RTTOV-SCATT
- Expanded all-sky assimilation to ATMS temperature channels 5 & 6 and MHS channels
- Fully flow-dependent background error covariances
- Increase horizontal resolution in global ensemble system from 39 km to 25 km

Ongoing Research for Future Development:

- Integration of RTTOV v14
- Extension of all-sky assimilation to ATMS humidity
- Automated channel selection procedure (DFS) for hyperspectral data assimilation
- Improved QC & observation thinning

New Satellite Data Sources:

- HY-2B and HY-2C: ocean sea surface wind measurements
- NOAA-21: ozone total column data
- ATMS & CrIS-FSR radiances from NOAA-21
- MWHS-2 DBNet radiances from FY-3D and FY-3E



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