



Cloud Verification WG

DTC Verification Workshop

Goals

- Identify techniques beyond current MET capability that would be a value add for users
 - What algorithms?
 - Which users?
 - Value added?
 - Priority
- Specifically interested in:
 - Simulated remotely-sensed products
 - Microphysics scheme diagnostic studies
 - Use of other WWMCA-like products out there
- How should we handle in-situ obs?
- Ways to diagnose observational uncertainty?

Day 1 - Questions

General Questions

1. Are all forecasts gridded? *TAFS are point forecasts*
2. What methodologies are used for bridging the resolution gap?
Especially high res obs and low res forecasts? ECMWF – 16km, GFS – 50 km, NAM – 12 km; hires window 5 km; 3km; some 1 km runs –
 - Recommendation is to not use bilinear interpolation but rather use nearest neighbor approach
3. How do we quantify uncertainty associated with model post-processing to produce derived fields?
 - Isolate the impacts of postprocessing by conducting sensitivity studies
 - Sensitivity studies of parameterization impacts
 - Take a look at CFMIP – looking at climate models by using a forward model and compare with observations using a statistical basis
4. Should we verifying on the observation grid or on the forecast grid?
 - At the moment – observations tend to be at finer resolution so generally aggregate observation (using fractions) to model field
 - Others are exploring means, unweighted means, etc...

Day 1 - Questions

Verification in Data Assimilation

- What are the typical statistics/metrics calculated during the assimilation process?
- Would spatial methods be useful for DA methods?
- Comment – DA can be a test of observation quality but data and models need to be quite good to start with (anonymous source) 😊

Day 1 - Questions

Simulated satellite verification...

- Beyond today's examples - how does the community anticipate using satellite data for verification
- What traditional statistics do you anticipate using?
- What spatial methods do you think would work?
- How should missing data be handled for spatial methods?
- How should “vertical curtains” generated by vertically looking instruments be used?
- What are the anticipated errors in the observational field?
- What are the anticipated errors in the simulated fields?

Day 2 - Questions

Microphysics Evaluation and Diagnostic Studies

- Is the x-y plane the optimal 'grid' to evaluate microphysics on? If not – what is?
- How should MET be interpolating in-situ observations? Does it depend on the variable?
- Should be evaluating raw data from remotely sensed obs and forecasts or the derived products
- Are there unique ways that time-height cross-sections of remotely sensed variables should be evaluated?

Day 2 - Questions

- What formats should we expect:
 - *Remotely Sensed: hdf4, hdf5, netcdf, flat binary*
Document the format you expect – write their own converters
 - *In-situ: text or netcdf;*
- How does community assess observational uncertainty
 - What is truth?
- What did we miss?

Day 3 - Questions

Timing issues: Convective initiation, propagation, stratus burn-off, etc...

How do people currently verify “initiations or onsets” and “dissipations or burn-offs”?

What are common observations for these type of forecasts?

Satellites – *GOES-R (will be 5 min updates)*

Meteosat (15 min updates)

Does the community produce probabilistic forecasts of these type of events?