

LAPS Research/Development Opportunities breakout session notes

1. CRTM Requirements

Testing on AMSU A & B data (Tb or radiance) in STMAS

Land surface models/considerations

- AMSU-A temperature has generally positive impact on models, AMSU-B moisture not so much.
- What are the impacts/consequences of combining different RT models? E.g. LAPS/STMAS will use CRTM; WRF may use another RT model. Care must be taken to make sure that the initial conditions provided by VLAPS are compatible with the RTM used by WRF.
- Would it be advantageous to use a cloud mask produced by NESDIS or another satellite agency (e.g. EUMETSAT) in LAPS?

2. New observations

E.g. MDCARS/AMDAR

Signal delays/refractivity

Satellite radiance

3. How many LAPS users use the full capabilities e.g. the balance package.

Two issues

- Terrain; problems with the vertical coordinate
- Creates noise... reducing the number of iterations mitigates the problem.
- Problems were addressed about 1-year ago... recommendation is to download the most recent release if you intend to use the balance package.

4. Relative merits of observation nudging / analysis nudging / variational approaches to innovations.

5. Choice of first guess for cycling

- A good first guess improves the analysis. KLAPS uses analysis from two domains with different spatial (5 km and 15 km) and temporal (6-h and resolution resolutions to provide initial conditions.
- Boundary conditions come from global model (6-h) used for 15 & 5 km nests.

6. Error Variance