

Verifying forecasts through Time Results of Discussion Group

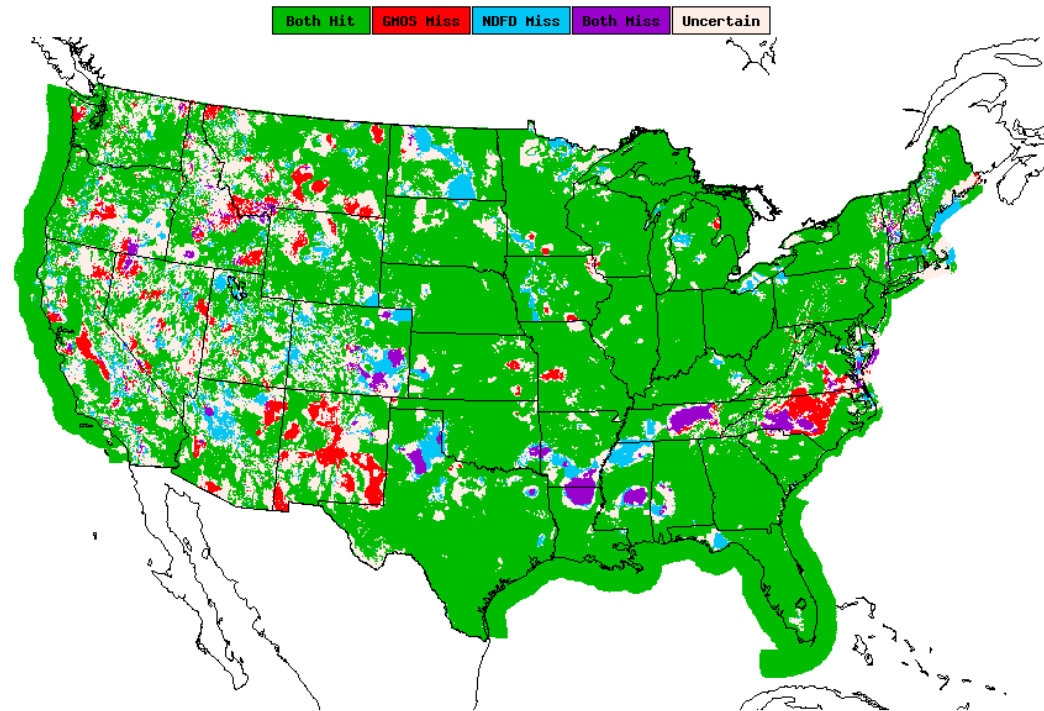
Participants

- David Ruth
- John Raby
- Randy Bullock
- Justin McLay
- Ervin Zsoter
- Matthew Wandishin
- Don Morton
- Chris Davis
- Jason Knievel
- John HG
- Tom Cram
- James Pinto
- Geoff DiMego
- Ed Tollerud

- Different types of forecasts
 - Tracking objects or features through time.
 - MODE time domain
 - Titan
 - Event horizon (same valid time) forecasts.
 - Long time series (e.g. daily max at Denver with 24 hour lead time).

Timing of Observations

- Led to a discussion of observational uncertainty.
- David Ruth shared a look at verification with observational uncertainty at MDL.



Temperature(F) Fri Aug 06 2010 11AM EDT
(Fri Aug 06 2010 15Z)

HIT PLOT FOR 00z GMOS AND 12z NDFD (PCT HIT - GMOS: 94.06% NDFD: 93.11%)

Graphic created-Aug 08 9:30PM EDT



How should MET handle many observations at close times?

- This is important and something that should be done.
- It is best if users who know their data handle this, and preprocess.
- Make sure users know that if users put in 5 observations, MET will use them all.

Is consistency a good thing?

- Lots of discussion and discord on this topic.
 - Justin McLay “No evidence to show that jumpiness is good for any user”. Justin’s analysis used probabilities, and jumpiness is still not good.
 - Zoltan: Jumpiness necessary, but mitigated by use of ensembles to explicitly communicate uncertainty. Each forecast just needs to be contained within the earlier ensemble.
 - Is the difference in whether jumpiness is good for forecasters but bad for users?

Is consistency a good thing?

- In Econ, consistency is bad. “Rational” forecasts have only random variation since all information should be incorporated at once.
- What about expectation of lower variation as event approaches? Not handled in current “consistency” measures, but possibly user configurable.
- Could use FCS on exceedance value for probability level to use with ensembles. Use as is for deterministic.

Discussion about Justin's Markov Chains.

- Events and probabilities can be user dependent.
- Possible Kalman filter estimation of probabilities
- Concept of “sneaks”, “phantoms”, and “flip-flops”.
- All user cost functions in study show that greater lead time knowledge is better for user.
- Flip flops more rare than changes from climatology to ‘event’ or ‘non-event’, or changes from one to the other.

What to put in MET?

- Add basic ability to look at forecasts and observations through time.
- Might be able to implement Daran Rife's ideas with current MET capability. Create differences in time with `pcp_combine`, then verify difference field with user configured threshold. Interesting to test.

Potential new stuff for MET

- Implement FCS.
- Implement Zsoter jumpiness measure.
- Look at Zoltan's "outliers" for ensemble forecasts.
- Need further discussion about whether jumpiness is good or bad.
- Examine probability distributions through time. (Tough with space). (Show 'wings' on points to show spread).

Tracking objects through time

- Lots of discussion
- Much interest
- Few answers
- Plumes show time features in constant space.
- Composite or integrated forecasts incorporate time into constant space. Geoff says these are being put into NAM, but with no plans to verify. (We volunteer to help out.)