Lessons Learned in 2009

From DTC Perspective

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HWT/DTC Collaboration Meeting

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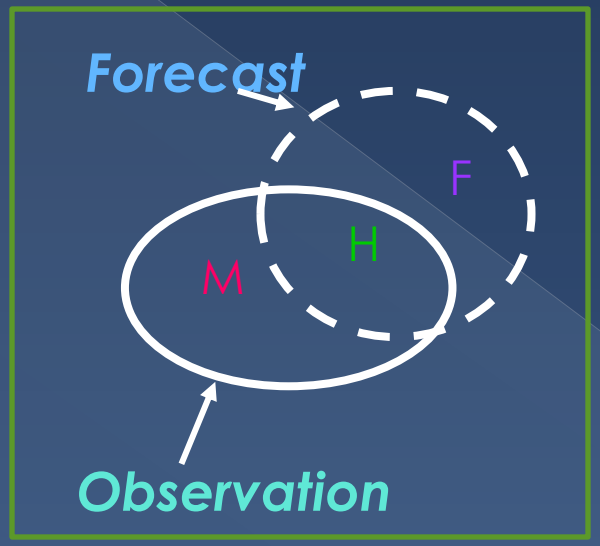
What Was Evaluated

- **Models**
  - ARW_CAPS_C0
  - ARW_CAPS_CN
  - HRRR
- **Observations**
  - Q2 QPE and Composite Reflectivity
- **Initializations and runtimes**
  - 00 Z and 12 Z initializations
  - 00 Z initialization – moving domain
  - 12 Z initialization – static domain
  - Out to a leadtime of 12 hours
- **Verification**
  - Traditional and Object Oriented Verification
  - Verification completed by 11 am each day

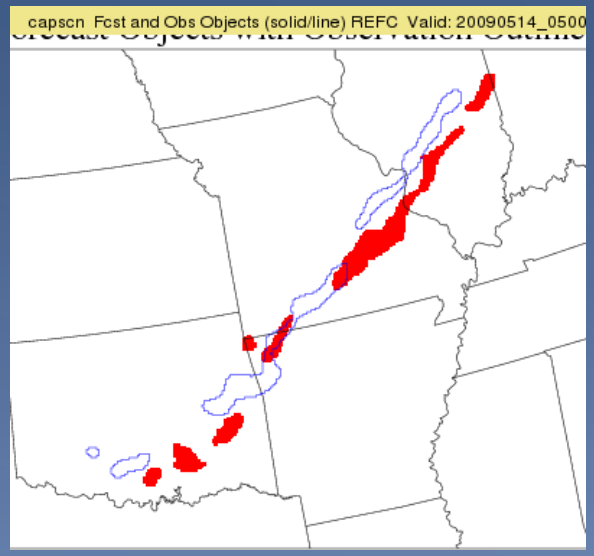
Grid-Stat - Traditional Vx



Statistics for Dichotomous Variables Including:

- **Frequency Bias**
- **Gilbert Skill Score**
- **Critical Success Index**
- **PODy**
- **FAR**

MODE – Spatial Vx



Once Objects Indentified:

- **Traditional Statistics may be calculated**
- **Attributes of the objects may be computed**
  - ***Intersection Area, Area Ratio, Centroid Distance, Angle Difference, Percent Coverage, Median of Maximum Interest, Intensity Quartiles***

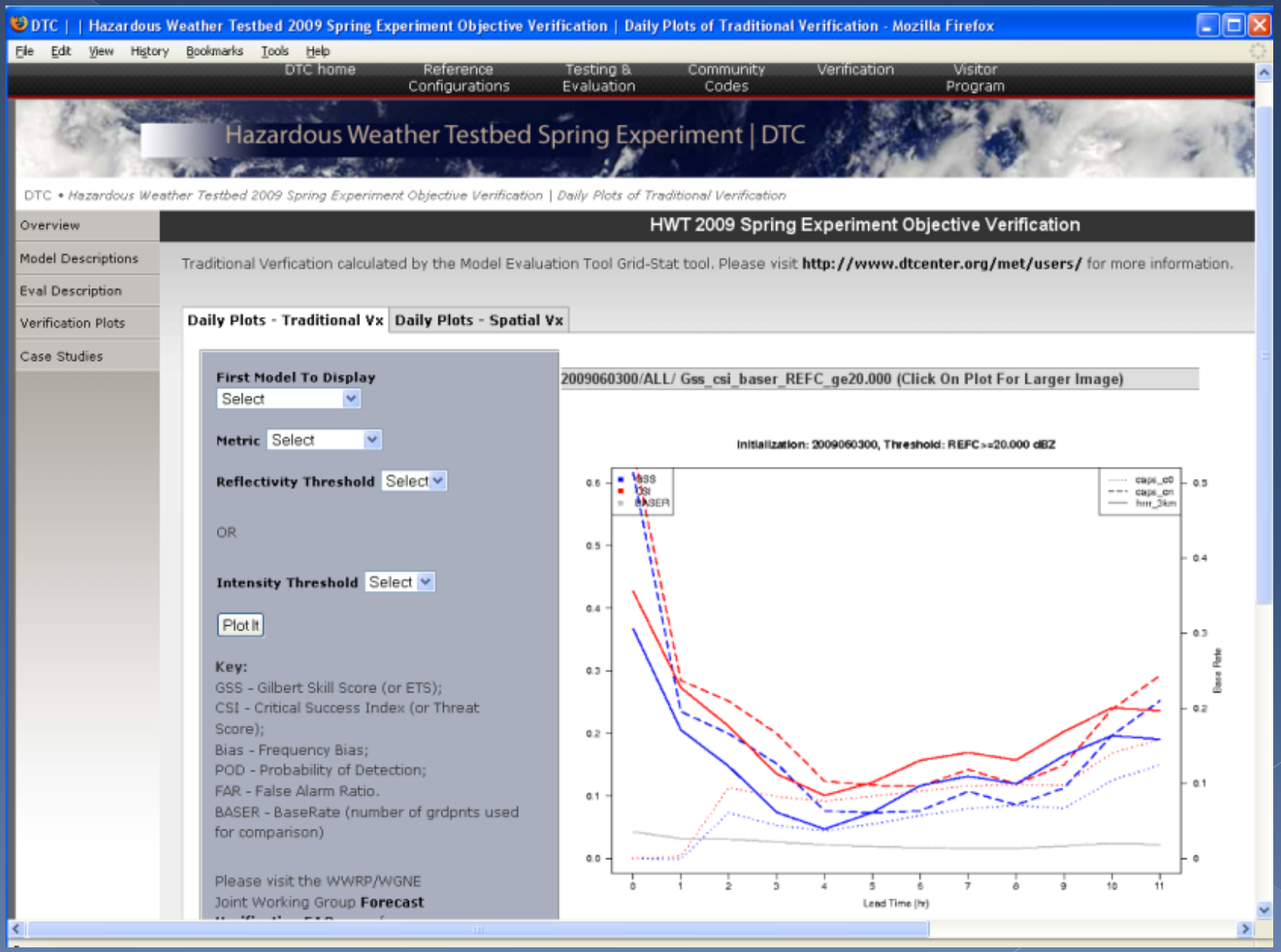
What did it take to do this?

- 1 linux pc running close to non-stop from 9 UTC to 16 UTC (3 am to 10 am CDT)
- 52 configuration files
  - 7 thresholds for Accumulated Precip
  - 5 thresholds for Composite Reflectivity
  - 3 models
- 2600 forecast files (6 GB)
- 1100 obs files (13 GB)
- 114,000 MET output files (560 GB)
- 175,000 png images (8 GB)

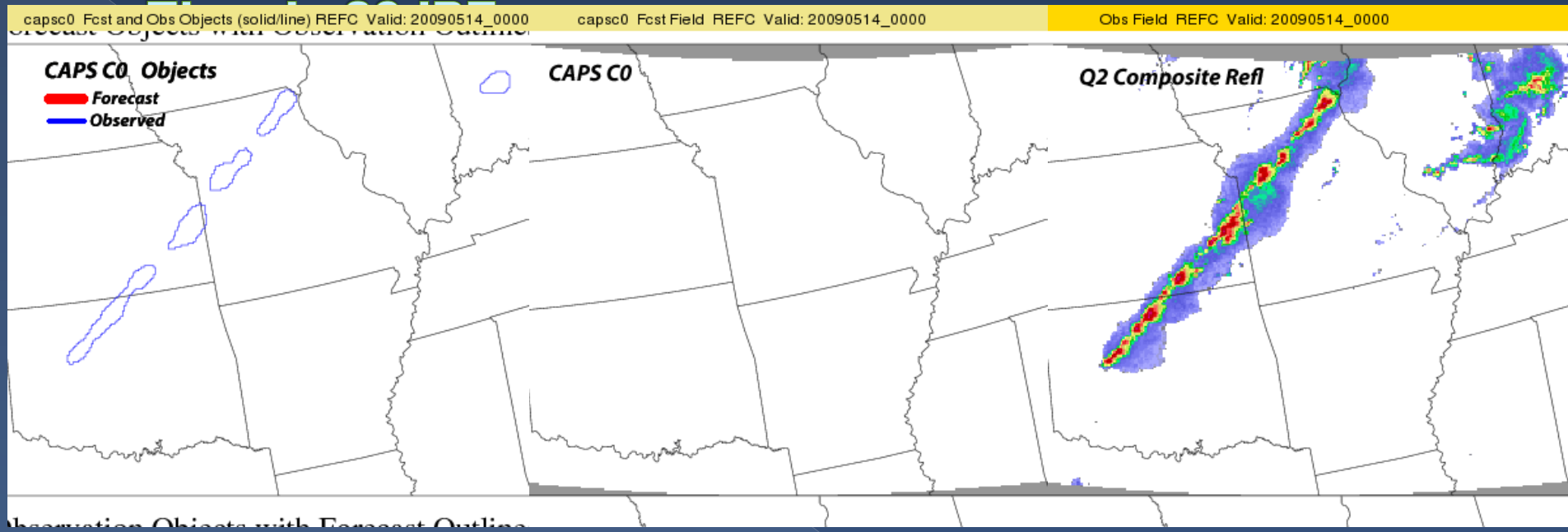
Get test files early

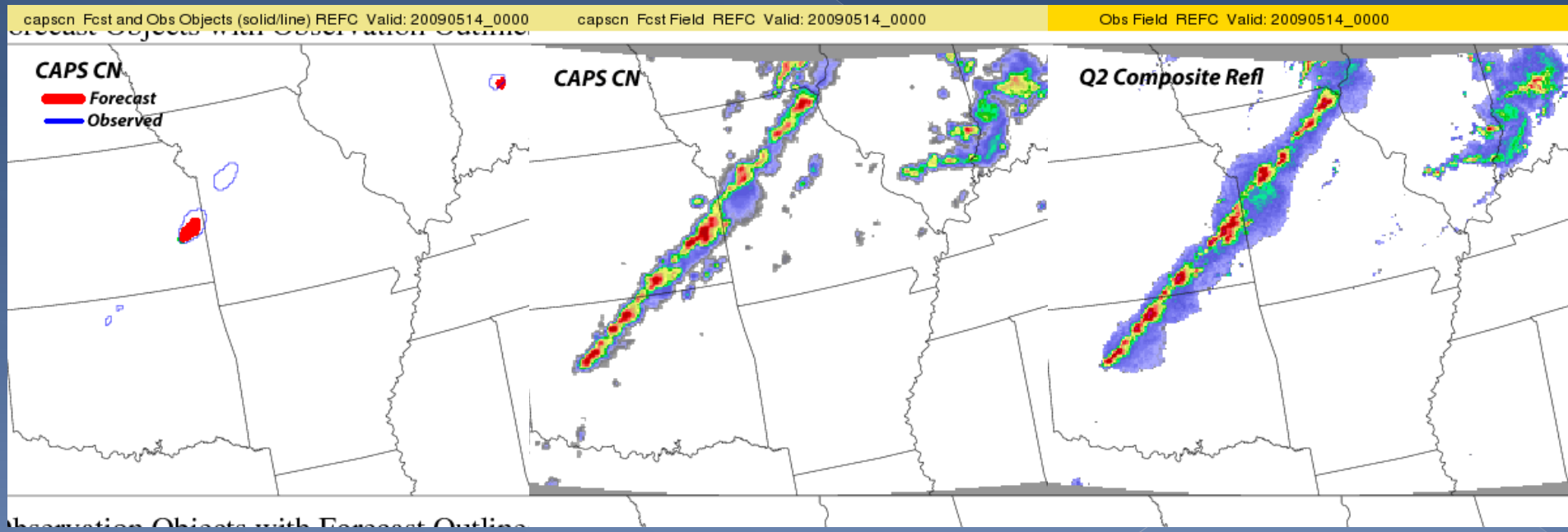
- We had to do some work to get gridded data in correct format
- We had to experiment to have MET properly identify Reflectivity
- We had to modify how MODE handles missing data during convolution to speed up MODE

Borrow Code when necessary

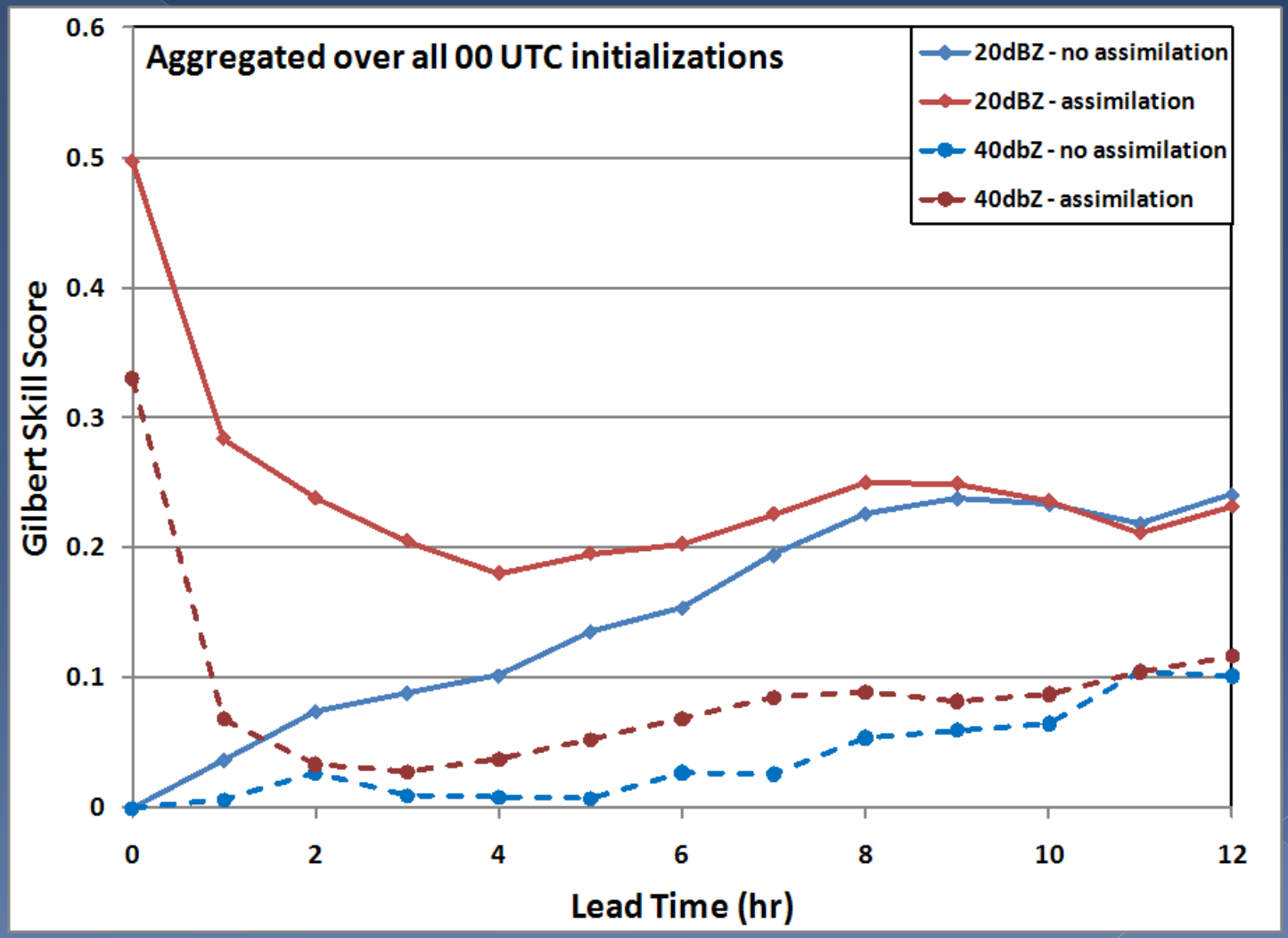


14 May 2009 Init: 00 UTC MODE - Radius: 5 (20km);

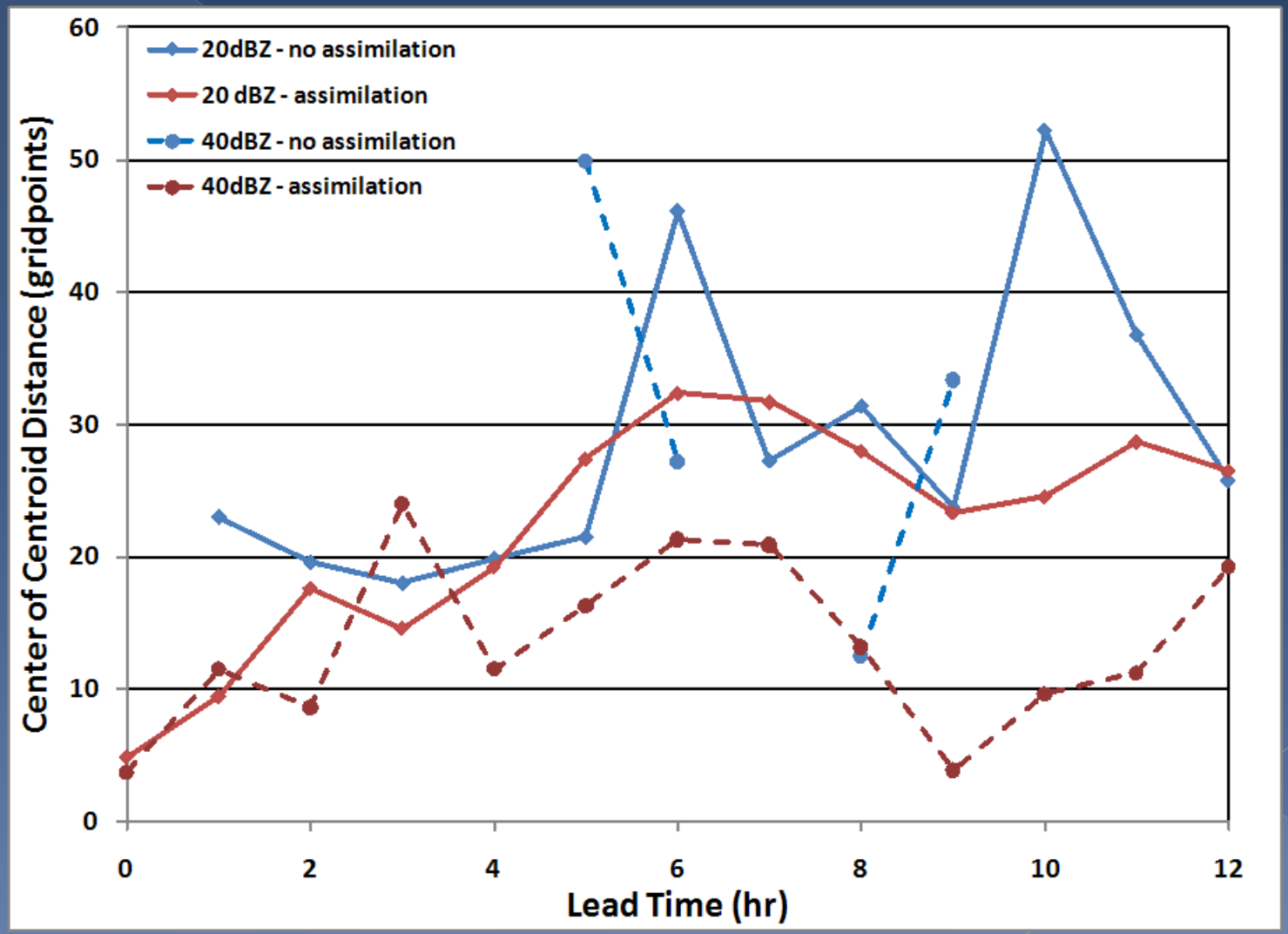




Plenty of cases for Trad. Vx



We need more cases for Spatial Vx



Lessons Learned in 2009

- Get sample output early
- Borrow code when necessary
- Hope that GSDs wjet/lfs0 stays up
- We need more compute power if we are going to run ensembles next year

Finally

- Radar assimilation does appear to influence on forecast skill but influence is short-lived
- We need more cases to attach statistical significance to analysis