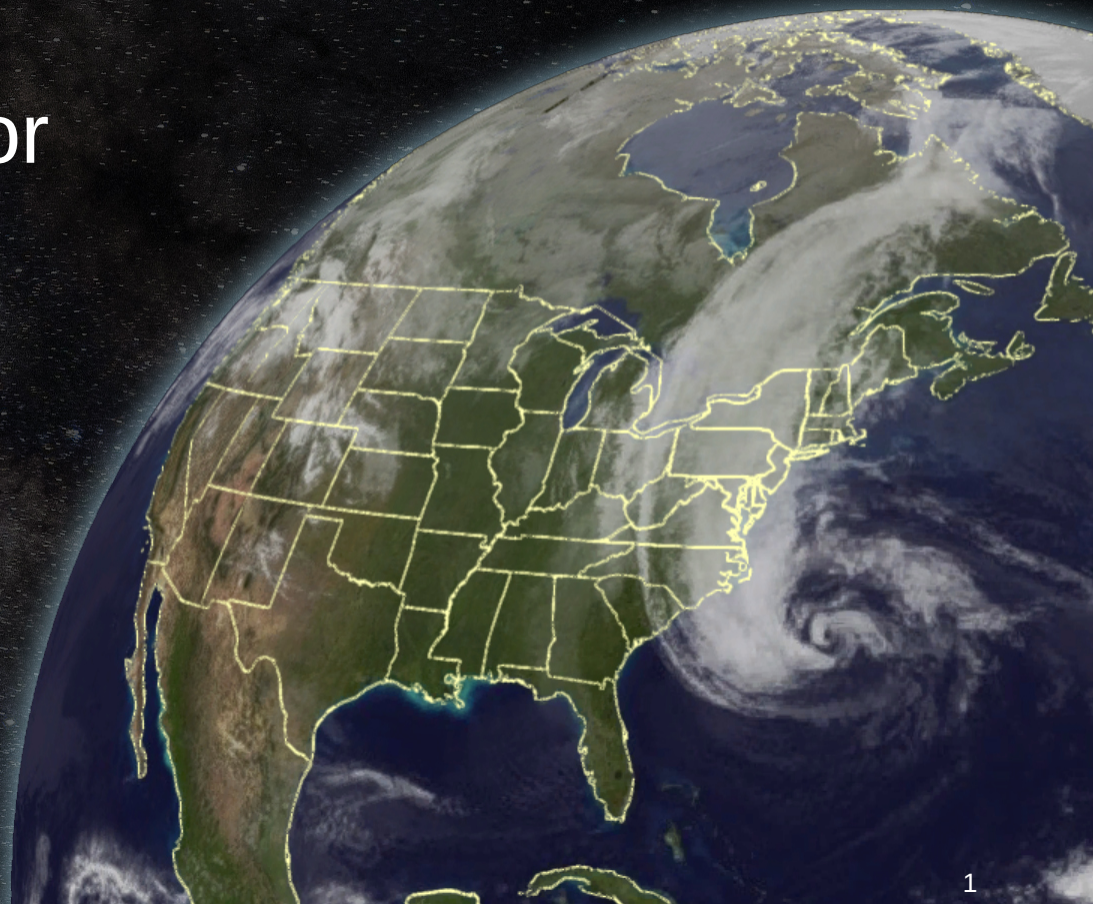
Verification Tools for Aviation Weather

Missy Petty
CIRA
Performing work for ESRL/GSD

GSD Science Review
3-5 Nov 2015



Verification Tools for Aviation Weather

U.S. Department of Commerce | National

CBVT

CWSU Briefing and Verific

Welcome matt.wandishin@noaa.gov

Calendar

	Sun	Mon	Tue	We
18	Apr 26, 20	27	28	
19	3	4	5	
20	10	11	12	
21	17	18	19	
22	24	25	26	
23	31	Jun 1	2	

About Us

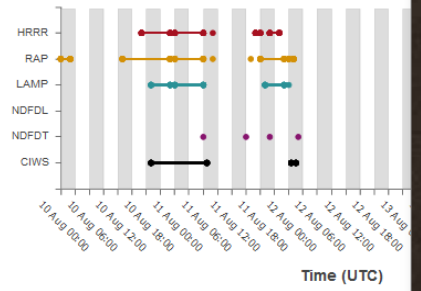
U.S. Department of Commerce | National Oceanic & Atmospheric Administra

EVENT

Event-based Verification and Evaluation of NWS Gridded Products

EVENT Viewer

Showing Data from: **Aug 10 2015 00:00** to **Aug 14 2015 23:00 UTC** using Air



Requirements Table

Showing Data from: **May 01 2015** to **Aug 31 2015**

Onset NDFDT

Lead	POD-NDFDT	POD-MOC	FARatio-NDFD	FARatio-MOC	Timing-ND
2	0.37	>= 0.85	0.68	<= 0.15	24.97
4	0.37	>= 0.80	0.70	<= 0.20	24.29
6	0.37	>= 0.75	0.71	<= 0.25	23.12
8	0.37	>= 0.75	0.71	<= 0.30	23.92

Cessation NDFDT

Lead	POD-NDFDT	POD-MOC	FARatio-NDFD	FARatio-MOC	Timing-ND
2	0.34	>= 0.85	0.70	<= 0.15	24.29

About Us

VRMC

TURBULENCE

VRMC Home

GTG3.0 Assessment - Winter 2013 (beta)
GTG3.0
GTG3.0 Mountain Wave
GTG3.0 vs GTG2.5
GTG3.0 and G-AIRMETs

GTG3.0 Assessment - Summer 2013 (beta)
GTG3.0
GTG3.0 Mountain Wave
GTG3.0 vs GTG2.5
GTG3.0 and G-AIRMETs

GTG2.5 Assessment
GTG2.5
GTG2.5 vs GTG2.0
GTG2.5 and AIRMETs

GTG3.0 vs GTG2.5 - Winter

While most of what is new in GTG3 involves extensions to GTG2.5, it is still useful to compare the two algorithms where possible.

To that end, the various statistical plots below provide a comparison of the performance of the two products for the winter period 01/01/2013 - 03/31/2013.

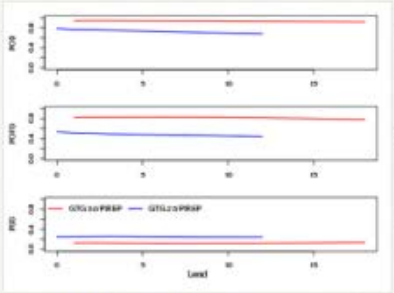


Figure 1 - 2013 Thresholds PIREP (Click on image for options)

Accuracy (POD and POFD) and skill (PSS) for each algorithm as a function of forecast lead time, verified PIREPs.

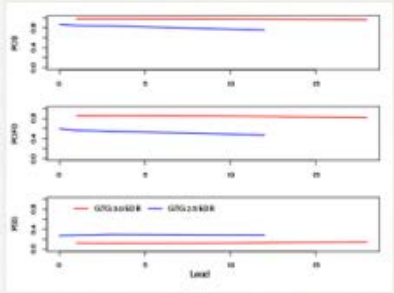
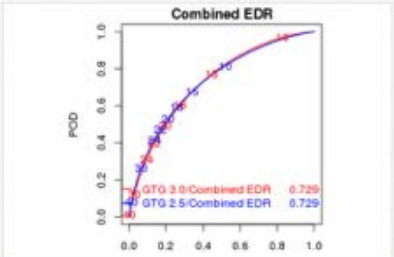
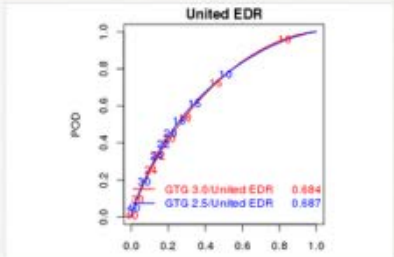


Figure 2 - 2013 Thresholds EDR (Click on image for options)

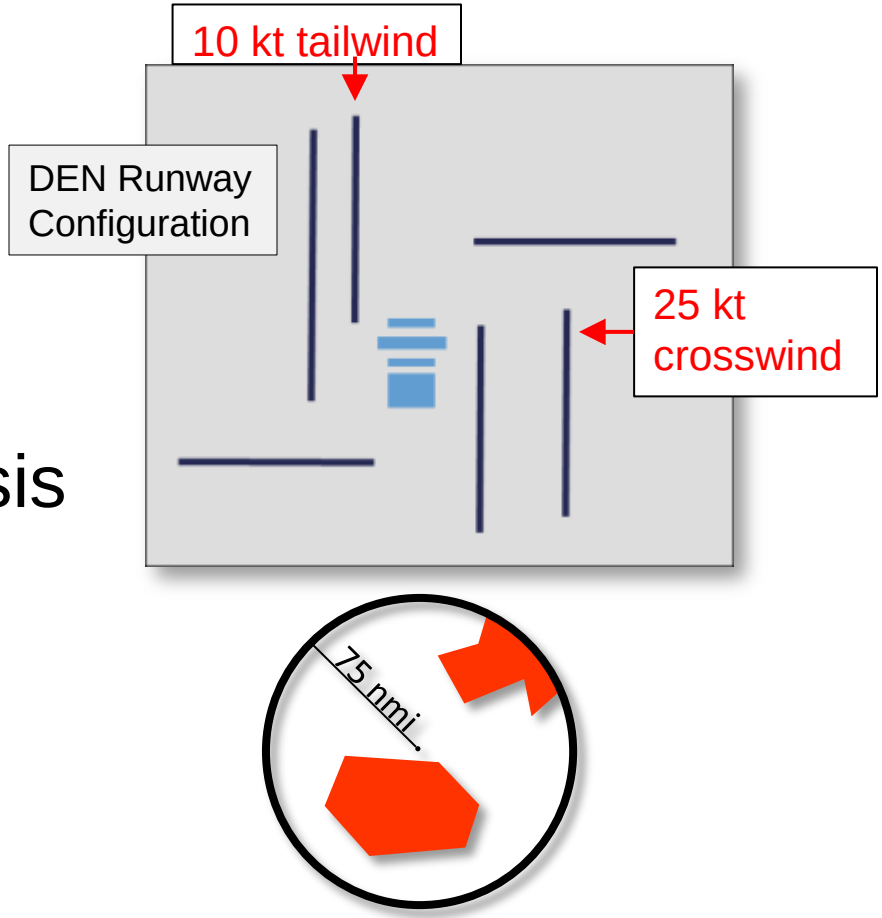
Accuracy (POD and POFD) and skill (PSS) for each algorithm as a function of forecast lead time, verified in situ EDR data.



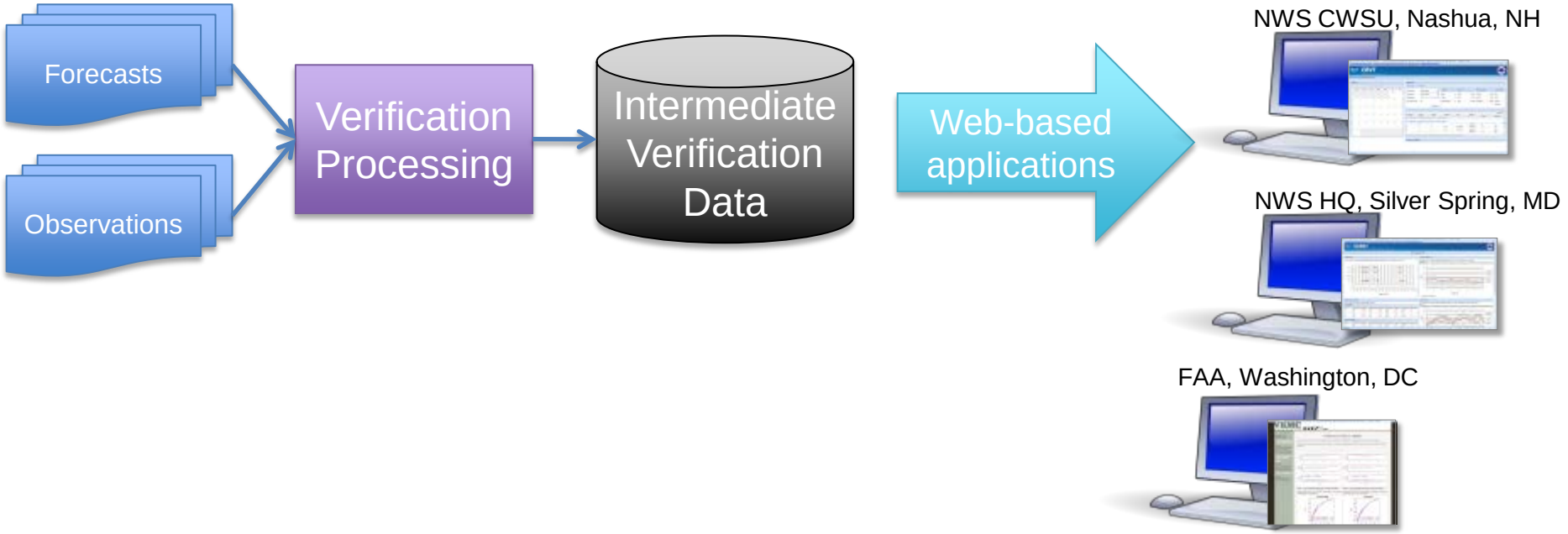


Measuring Product Performance

- Performance in an aviation context
- Monitor product performance
- Support in-depth analysis
- Provide feedback to product developers



Technical Challenges



Summary

- Our verification tools provide capabilities for ongoing monitoring and assessment of product quality in an operational context
- Support management decisions and provide feedback to forecasters/developers
- Future direction
  - Additional weather variables and verification techniques
  - Transition to NWS operations