



NSF View on Metrics and Validation

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Outline

- Brief Update from NSF
- NSF View on Metrics and Validation
 - Two perspectives on metrics
 - Support for M&V
- Conclusions

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My contact information

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- Always happy to help answer questions or find the person who can answer questions



Submitting proposals to NSF

- Fully committed to funding the highest quality science in support of NSF's mission
- Communicate with the cognizant Program Officer before submitting any proposal.
 - This is particularly necessary for RAPIDs, EAGERs, and interdisciplinary programs which have very specific criteria for compliance.
- Carefully follow PAPPG and solicitation as proposal may be returned without review for non compliance.



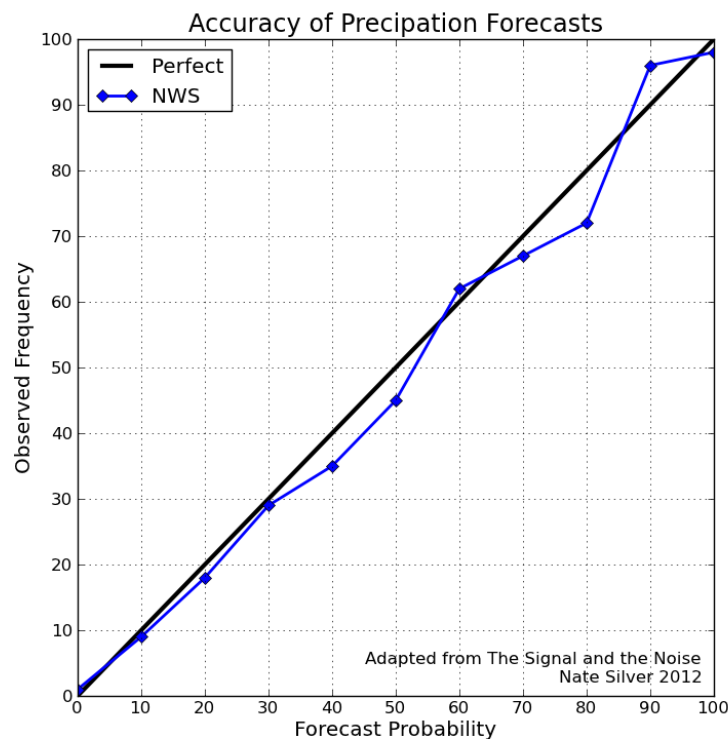
Current status

- We are currently operating under a continuing resolution (CR)
 - Current runs through April 28
 - Not making any new awards only processing continuing grant increments
- Size and number of new awards will be impacted by final FY17 budget amounts
- Encourage participation in cross division/agency programs
 - PRE-EVENTS, Earthcube
 - Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP) NSF 16-618



Comment on Forecast Value

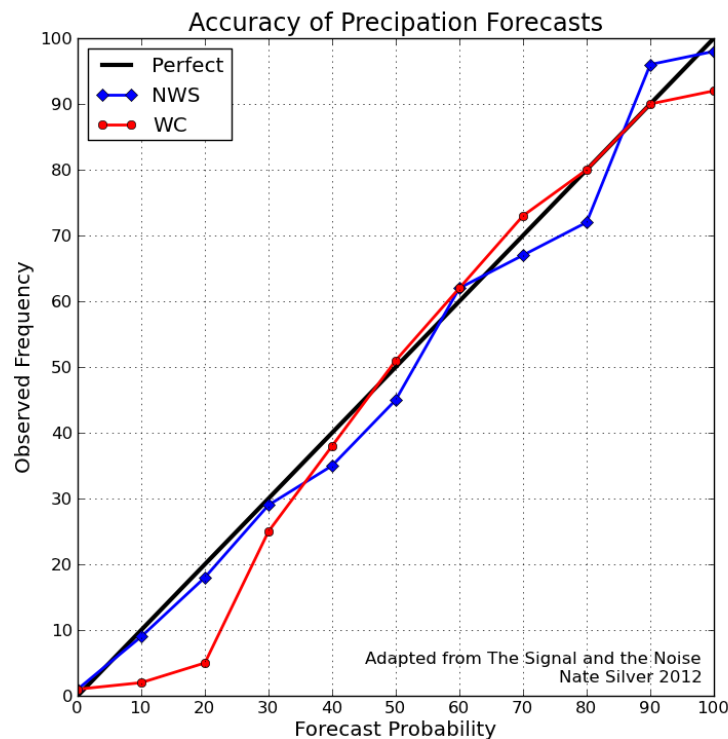
- There's a significant difference between 'forecast validation' and 'diagnostic verification' concepts
 - 'forecast validation' – provides a simple baseline assessment of models and means for inter-comparison
 - 'diagnostic verification' – attempts to delve more deeply into nature of these forecast errors
- Value of a forecast depends up the degree to which it helps a decision maker realize some benefit





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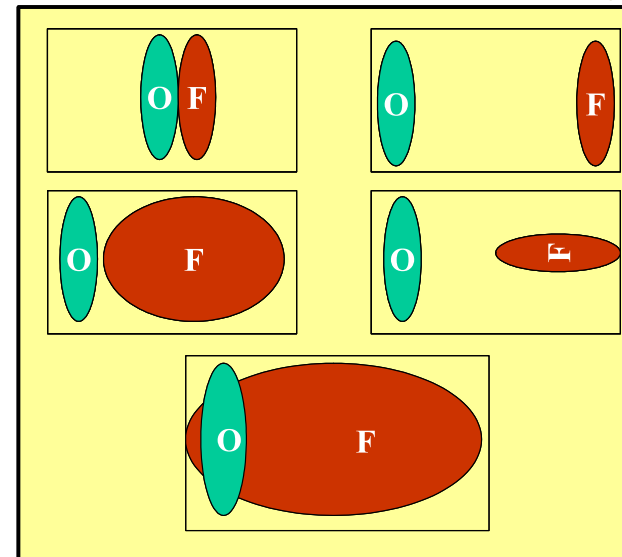
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Diagnostic Verification



- Understanding why model is and is not working is an essential part of model development
 - Appreciate the need for advanced diagnostics
- At NSF we support activities designed to use metrics and validation
- Remember we support transformative ideas!



CSI = 0 for first 4;

CSI > 0 for the 5th

Support for Metrics and Validation at NSF



- A key aspect of our support for Metrics is through the involvement of GEM, CEDAR, and SHINE in Modeling Challenges conducted in collaboration with CCMC
 - GEM – Since 2008 – At least 6 publications and numerous presentations
 - Numerous topics from ground magnetic fields to space plasmas
 - CEDAR – Since 2009 – A few papers and numerous presentations
 - Topics include neutrals, plasma, and winds
 - SHINE – Since 2012
 - Comparison include images, time series, and arrival times



Conclusions

- Geospace section staff is available to answer any questions about proposals
 - While funding is tight we are looking forward to supporting the best possible science projects including those with metrics and validation aspects
- Metrics and validation are appropriate aspects of CEDAR, GEM, SHINE projects
 - Continue to encourage these communities to work with CCMC on Metric challenges
 - Successful PI lead proposal will likely need to focus on 'diagnostic verification' efforts
- Looking forward to learning more about the current efforts across the entire field of solar and space physics