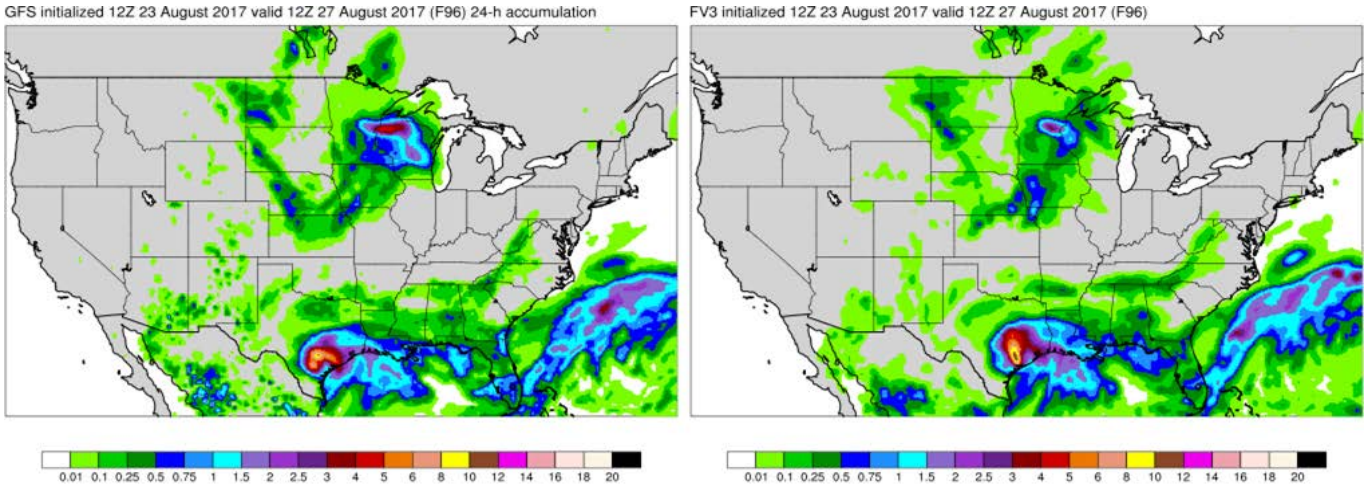
CURRENT MODEL EVALUATION EFFORTS at EMC



Geoff Manikin

SIP Coordination Meeting

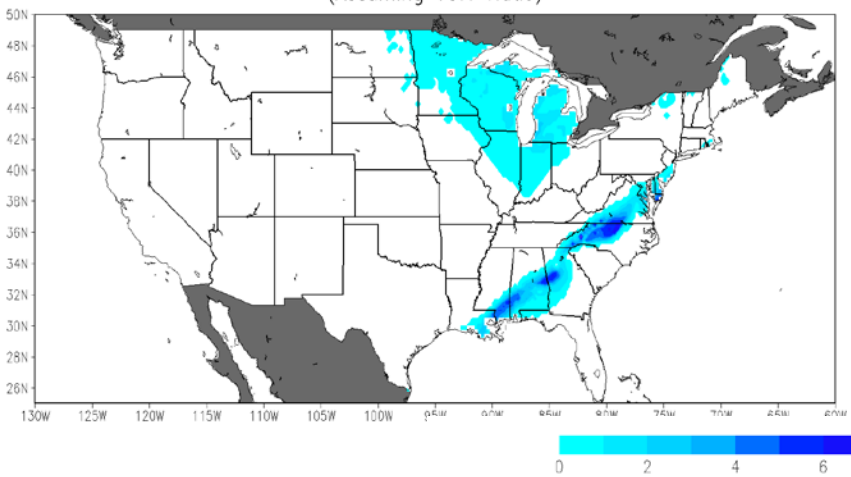
February 1 2018

EMC's Model Evaluation Group

- **OUTREACH** – the MEG serves as the "customer service" function of EMC with weekly webinars (Thursday 11:30 Eastern, open to all), direct communication, and visits to WFOs
- Provides daily examination of model performance from the perspective of the forecasting community
- Organizes neutral evaluation of EMC parallels and experiments – new larger role with new implementation process and new VPPG branch
- **Provides critical feedback to modelers and management and keeps customers and stakeholders "in the loop" regarding model changes, verification, and forecast issues**
- Provides streamlined feedback to outside users with model concerns – EMC is listening to customer/stakeholder feedback
- Can rapidly generate critical model performance case studies (2012 Mid-Atlantic derecho, Superstorm Sandy, 2013 El Reno tornado/OKC flood, 2015 PHL-NYC snow forecast bust, 2016 IAH and BTR floods, 2016 Matthew, 2017 PDX surprise snow, Fall 2017 Hurricanes)

FV3GFS BETA PLANS

- MEG will coordinate the evaluation, devoting frequent webinars to science updates, stats, and evaluations of relevant real-time and retrospective cases
- GFS/FV3 comparison web site already in place
- MEG meetings have examined initial FV3 performance in recent high-impact cases (winter storms, Harvey…)
- STI SOO team already meeting to plan out formal evaluation plans and data dissemination
- A formal test plan will be written in February
- Refining a list of “Top 10 GFS Problems” of things to closely examine in FV3
- Perform full statistical evaluation of retro runs and pick challenging/high-impact cases to scrutinize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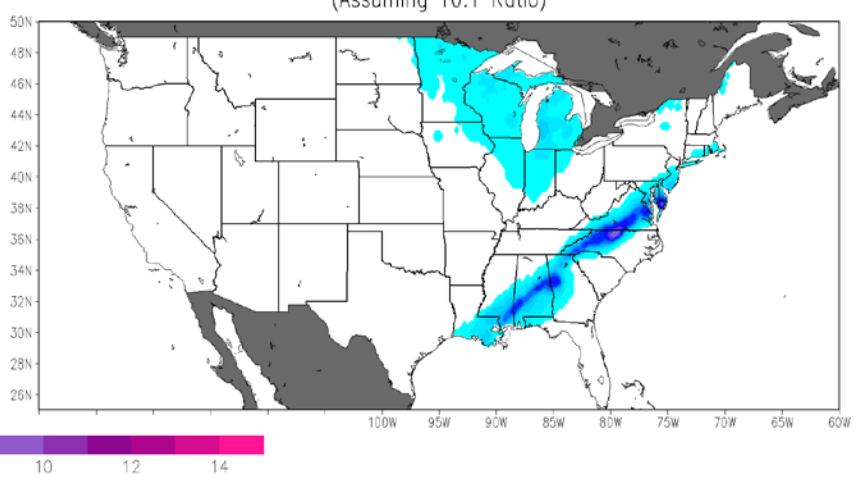
24-h Water Equivalent Surface Accumulated Snow [inches]
(Assuming 10:1 Ratio)
0 2 4 6 8 10 12 14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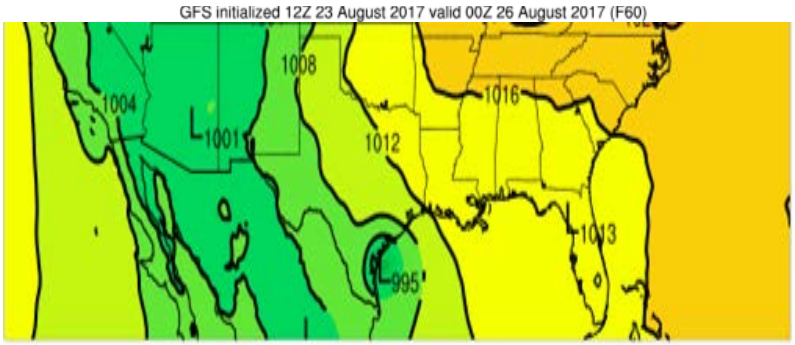
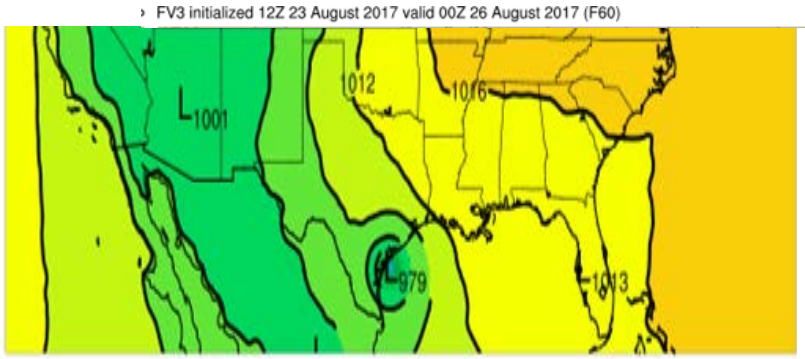

GFS initialized 12Z 23 August 2017 valid 00Z 26 August 2017 (F60)
SLP
1004
1008
1016
L1001
1012
1013
L995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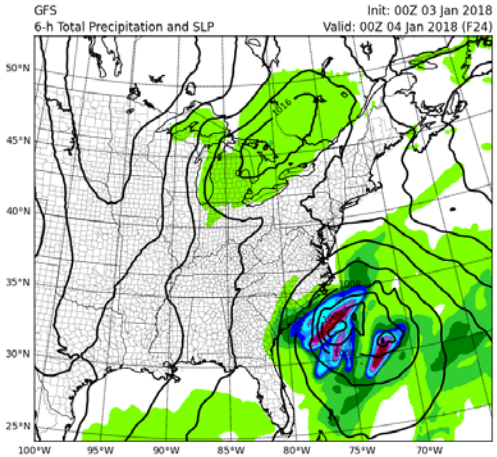
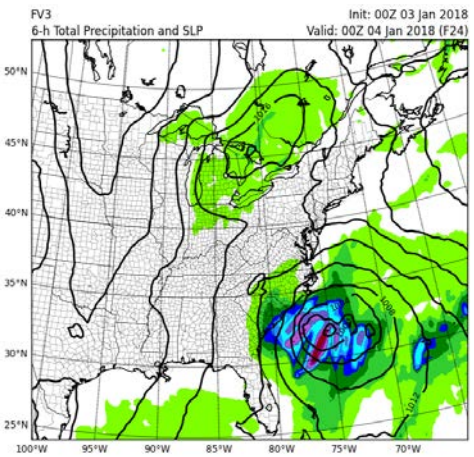

GFS
6-h Total Precipitation and SLP
Init: 00Z 03 Jan 2018
Valid: 00Z 04 Jan 2018 (F24)


FV3
6-h Total Precipitation and SLP
Init: 00Z 03 Jan 2018
Valid: 00Z 04 Jan 2018 (F24)

BEYOND

- NGGPS and FV3GEFS formal evaluations
- Will assist in initial assessments of FV3 CAM efforts (with STI SOO CAM team and others)
- Evaluation of CAMs and CAM ensembles will require community-vetted verification methods/metrics – ongoing collaboration between EMC, the MET team, GSD, NSSL, the CAM SIP team, and others to define needs and build necessary tools
- Need more visualization and diagnostic tools
- Need to build on engagement with field – feedback is critical but must be structured