Overall NWS field products review
8th Ensemble Workshop, Aug 28, 2019

Jeff Craven, Chief SMB
NOAA/NWS/OSTI/MDL Silver Spring, MD
Outline

1. National Blend of Models (NBM) - MME
2. Ensembles used in NBM
4. Outlook for NBM v4.0 (Oct 2020)
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NBM: a path for ensembles to WFOs

1. Unable to send all ensemble information via AWIPS to WFOs
2. Centralized incorporation of all available ensemble data including non-NOAA sources
3. Eventually hope for remote visualization and interrogation of all members (cloud?)
6 NBM sectors

1. CONUS - 2.5 km
2. Alaska - 3 km
3. Hawaii - 2.5 km
4. Puerto Rico - 1.25 km
5. Guam - 2.5 km (new in v3.2)
6. Oceanic - 10 km

Down the line, plans for American Samoa, West Micronesia, and East Micronesia
31 Inputs from 5 NWP centers

1. NCEP 19
2. Canada 4
3. Navy FNMOC 4
4. ECMWF 2
5. BoM Australia 2 (new in v3.2)
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Ensembles in NBM

1. NCEP - HREF, SREF, GEFS
2. Canada - REPS, GEPS
3. Navy FNMOC - NAVGEME
4. ECWMF - ECMWF

171 total members including ensembles and deterministic inputs for PoP and QPF
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NBM v3.1 has global deterministic and ensemble mean wave heights from GFS GEFS and NAVGEMD NAVGEME.

NBM v3.2 adds wave heights from ECMWF D and ECMWF E.
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1. National Blend of Models (NBM) - MME
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Probability products

1. PQPF06 (CO, AK, PR, OC)
   a. Full Spectrum calibrated CO, AK, PR
   b. 10th 50th 90th uncalibrated OC
2. PQPF24 (CO, AK, PR)
3. PMSL 10th 50th 90th (OC)
4. Wind Speed 10th 25th 50th 75th 90th (OC)
5. Snow06 Ice06 5th 10th 25th 50th 75th 90th 95th (CO, AK)
6. Snow24 Ice24 5th 10th 25th 50th 75th 90th 95th (CO, AK)
7. Snow48 and Snow72 Probs (CO, AK)

Also various threshold exceedance probabilities for snow/ice
Probability products

1. 1 hour Probability of Thunder (CO)
2. 3 hour Probability of Thunder (CO, OC)
3. 12 hour Probability of Thunder (CO, OC)

LAMP
HRRR
SREF
NAM MOS
GFS MOS
ECMWF MOS
Uncertainty products

1. MaxT Standard Deviation (CO, AK, HI, PR)
2. MinT Standard Deviation (CO, AK, HI, PR)
3. Wind Speed Standard Deviation (CO, AK, HI, PR, GU)
4. Wind Gust Standard Deviation (CO, AK, HI, PR, GU)
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NBM v4.0 probability products

1. Prob MaxT MinT (CO)
2. Prob 6 hour Thunder (CO)
3. Prob Visibility (CO, AK, HI, PR, OC)
4. Prob Ceiling (CO, AK, HI, PR)
5. Prob Snow Level (CO, AK)
6. Prob wind speed (CO, AK, HI, PR)
7. Prob wind gust (CO, AK, HI, PR)
8. Prob MaxRH MinRH (CO)
9. Prob Tornado, Hail, Wind Day 1 (CO via SPC)
Thanks for your kind attention

https://www.weather.gov/mdl/nbm_home
https://blend.mdl.nws.noaa.gov
https://vlab.ncep.noaa.gov/group/national-blend-of-models
https://veritas.nws.noaa.gov/qpfvs/
NBM v3.2 Master Documentation