Precip-related use of MET

- VSDB on METviewer
- Verification of FV3GFS parallel run
- MET for QPF verification/QPE validation

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QPF verification

Daily forecast *vs.* analysis images (ConUS, AK/HI/PR):
http://www.emc.ncep.noaa.gov/mmb/ylin/pcpverif/daily/

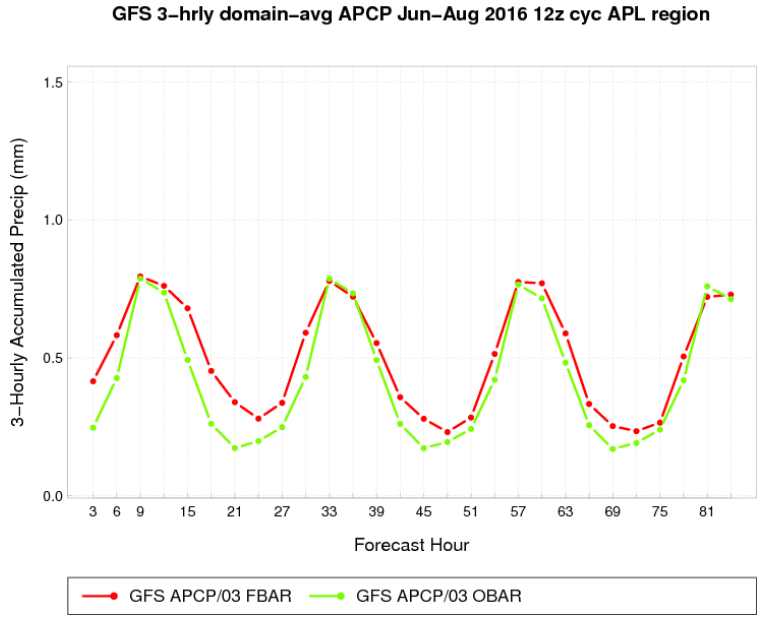
Stats/scores, portal to model QPF VSDBs loaded to METviewer:
http://www.emc.ncep.noaa.gov/mmb/ylin/pcpverif/scores/

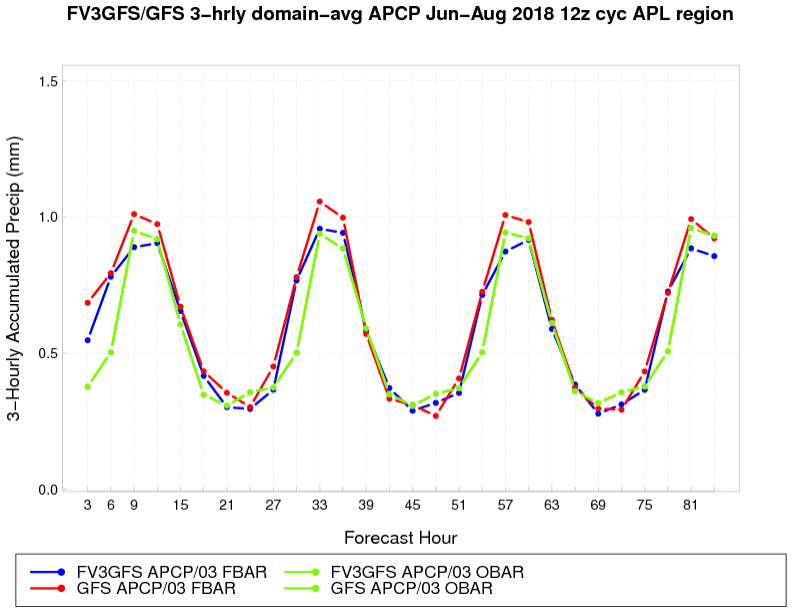
About 15% of model QPF stats get loaded to METviewer (add'l data loaded on user request)

Make large number of plots using METviewer batch engine:

http://www.emc.ncep.noaa.gov/mmb/ylin/pcpverif/gfs.diurnal/

GFS precipitation diurnal cycles plot: domain-averaged 3-hourly forecast APCP *vs.* analysis, for ConUS and the 14 subregions, for 3-month seasons from Jun-Aug 2016 to Jun-Aug 2018.





FV3GFS *vs.* GFS real-time parallel comparison: monthly and quarterly stats from June 2017:

http://www.emc.ncep.noaa.gov/mmb/ylin/pcpverif/scores.fv3/

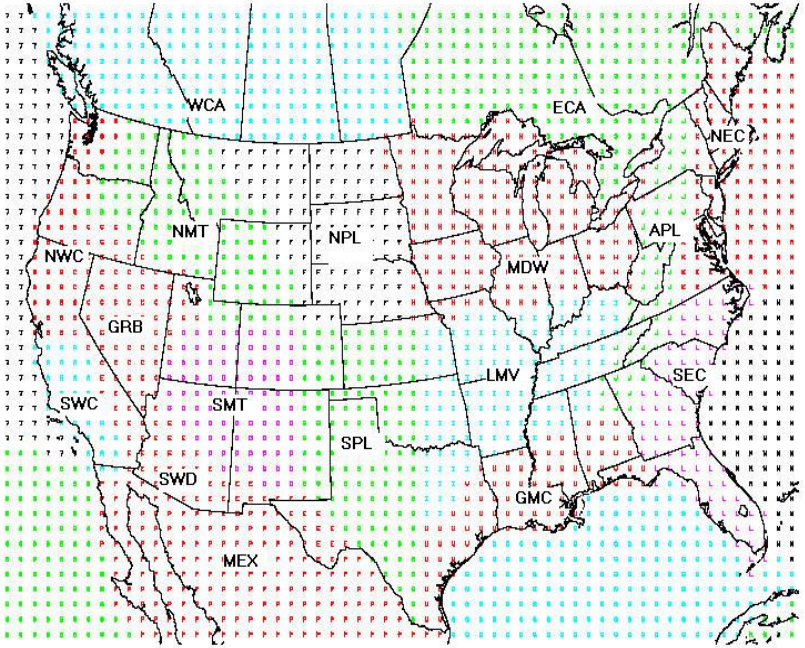
Daily updates to the “past 30 days” page suspended until Tempest recovers or an alternative found. Without data from tempest, the early morning 3 Oct scores run wiped out the latest score plots for the past 30 days.

Past months’ plots (last updated on 1 Oct for Sept 2018) and seasonal plots are still intact.

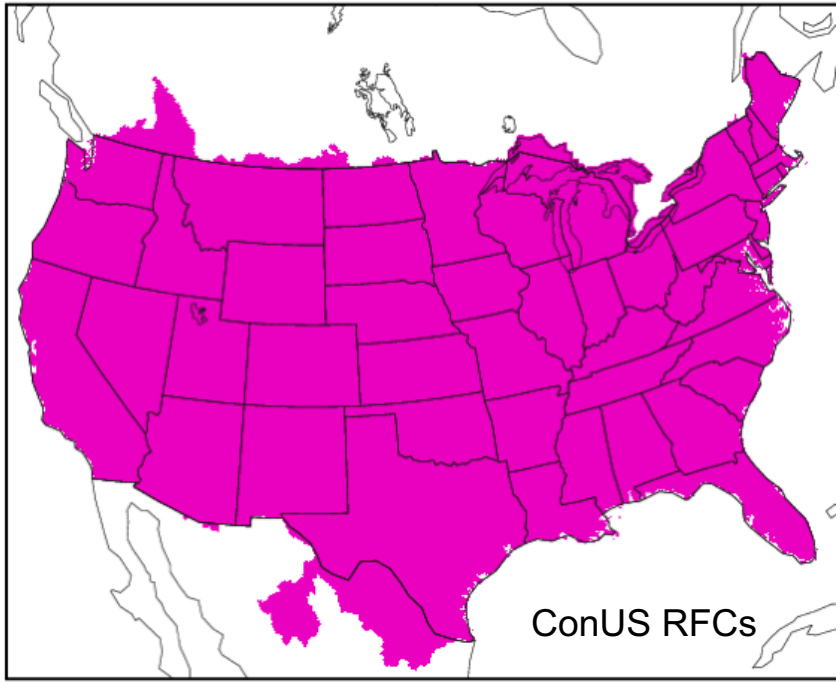
grid_stat for model QPF verif: verifying domains

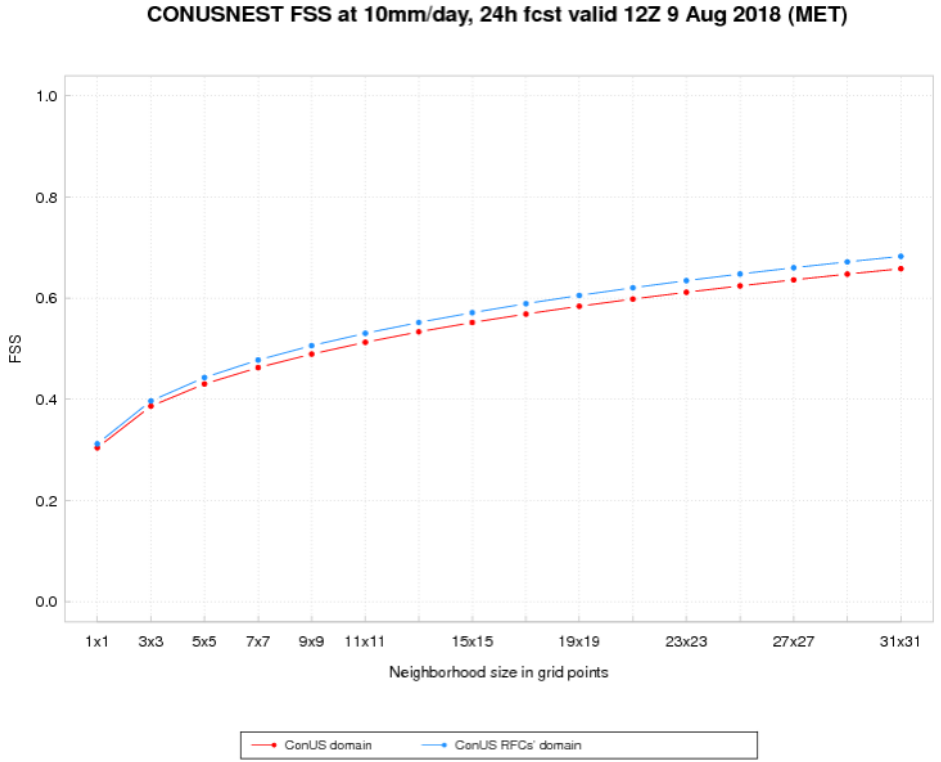
For CTC and SL1L2: use the current common ConUS and 14 subregions, switch to new subdomains (Bukovsky?) in the future.

For neighborhood verifications, use the ConUS RFC domain (vx_mask from RFC domain map on HRAP grid) for historical continuity.

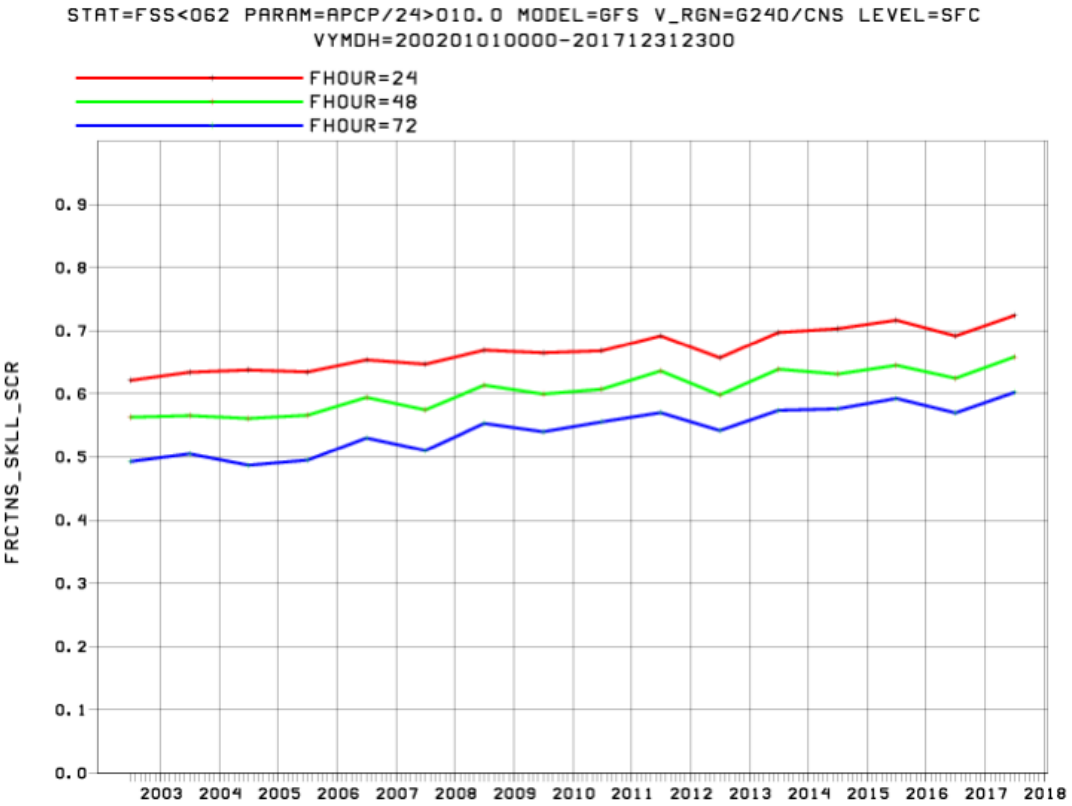


Neighborhood grid_stat: FSS on ConUS vs. CNSRFCS





Transition of long term model stats from VSDB era

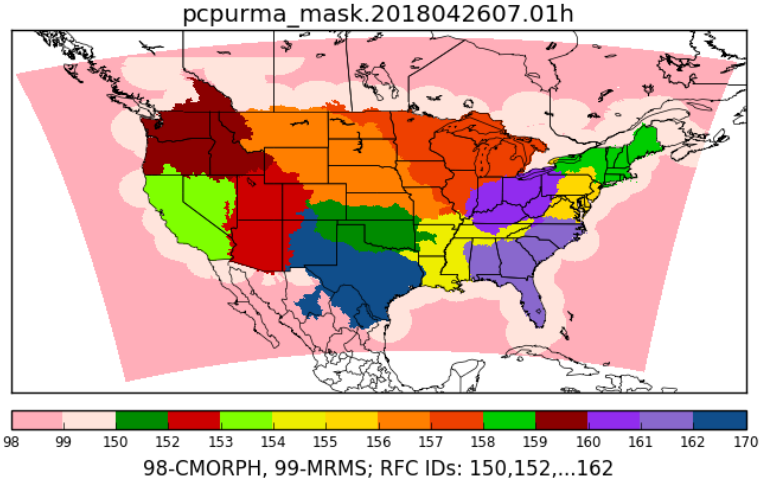


E.g. FSS of GFS 1/2/3-day forecasts at 10mm/day threshold and 62-km spatial scale for 2003-2017.

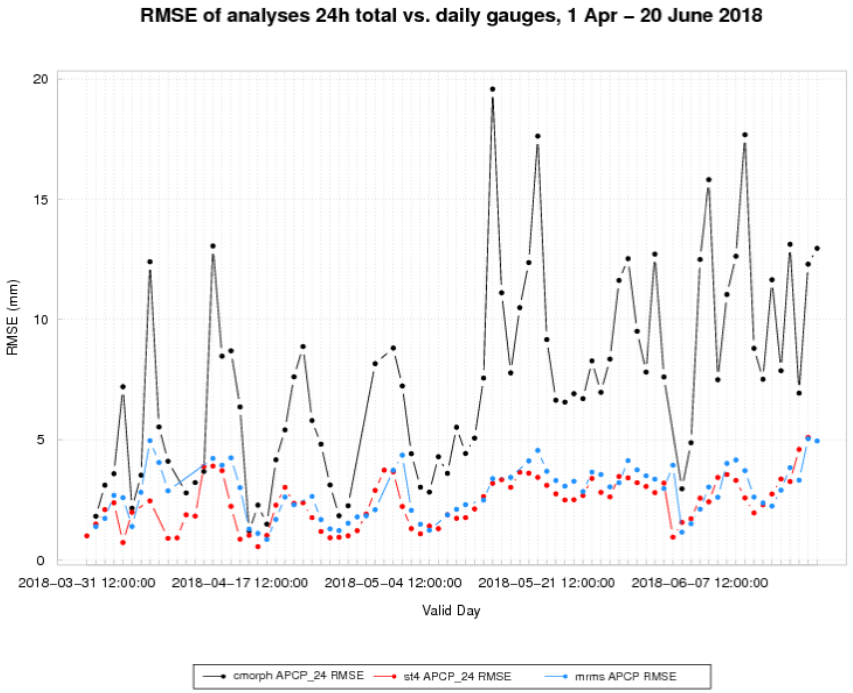
Possibly using FVS text-output option and some additional text manipulation to produce aggregate stats from VSDBs that are compatible with that from MET stat_analysis.

Use point_stat to validate QPE analyses against QC’d gauges

In URMA v2.7.0, for NBM:



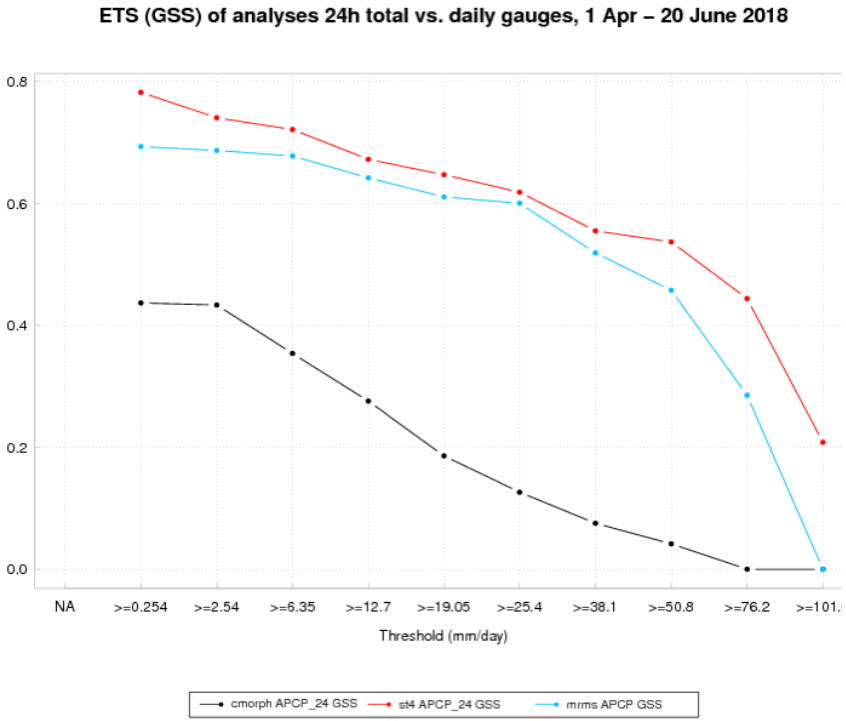
Use 1) gauge QC'd MRMS (where Radar Quality Index ≥ 0.1) and 2) CMORPH to fill offshore coverage in the Stage IV.

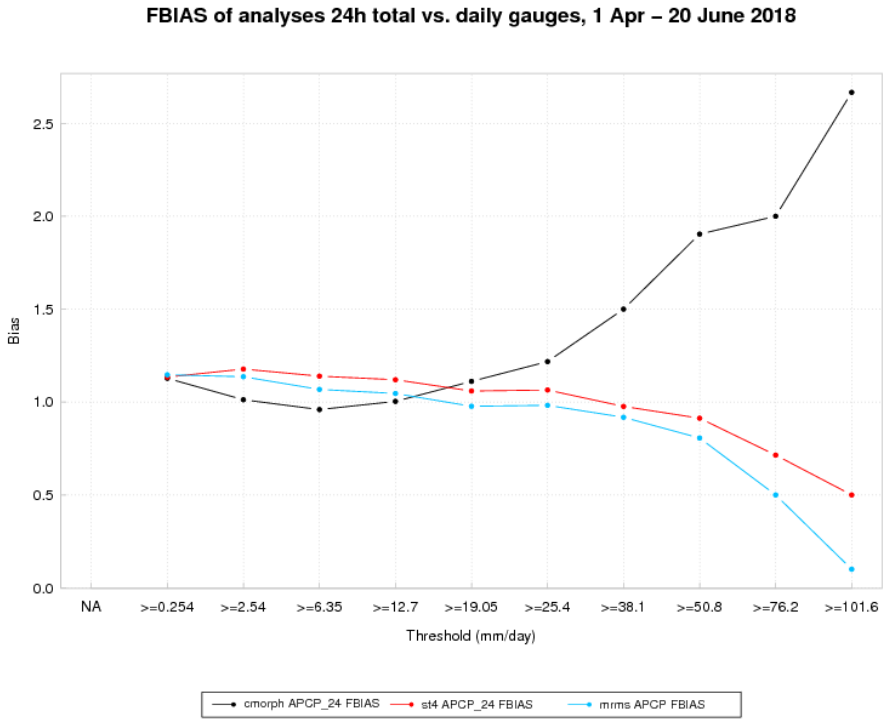


Stage 4, gauge QC'd MRMS and CMORPH, 1 Apr - 20 Jun 2018

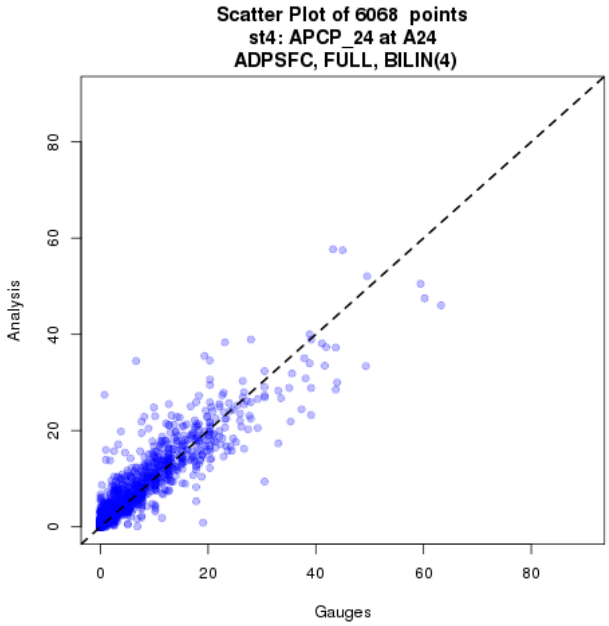
ConUS Validation Against Daily Gauges

Stage 4, gauge QC'd MRMS and CMORPH, 1 Apr - 20 Jun 2018

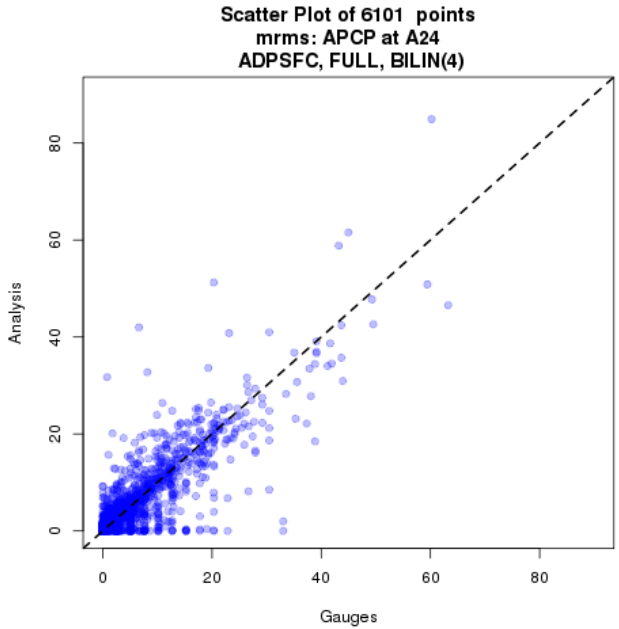




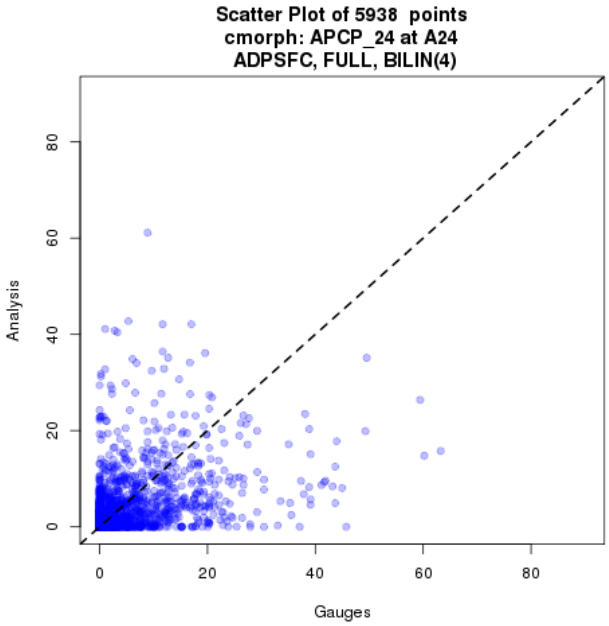
Analyses vs. gauges scatter plots, 24h ending 12Z 12 May 2018



Stage IV



MRMS



CMORPH

From matched pair output, plotted using R script from John's plot_mpr.R.

Use RFC domains on HRAP grid for vx mask for point_stat