HMT/DTC Model Assessment – 2009-2010 Winter Exercise Wrapup and Preliminary Results

Real-Time Verification Demonstration

- Examples
- Advertisements for New Utilities
- Caveats
- Wild Unsupported Speculation

HMT-WEST plans for 2010

- Ensemble-based Probabilistic Scoring
- Website Interface
- Data Impact on Scores
- AR prediction assessment

DAILY PERFORMANCE for APCP_24 MAE
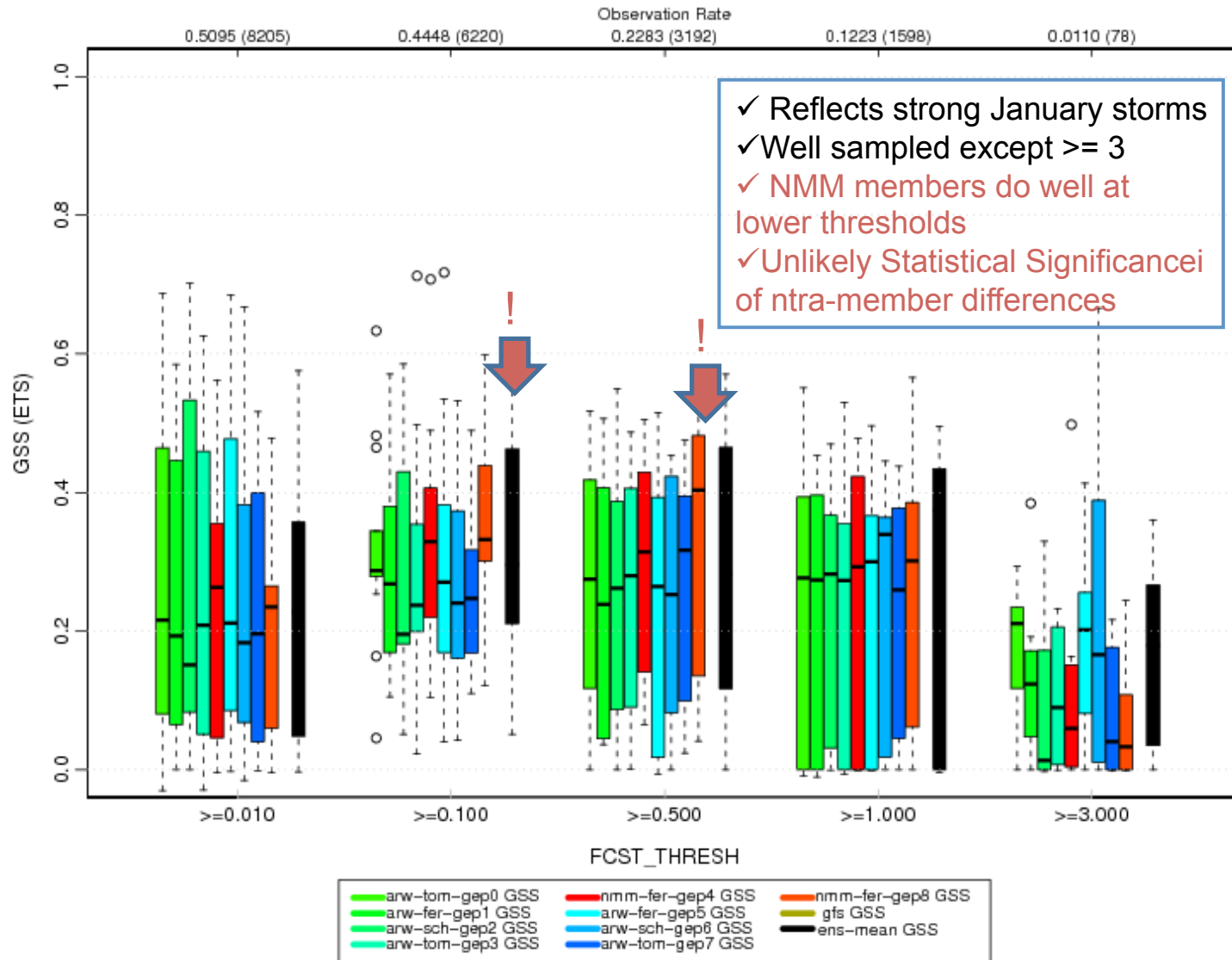24hr FCST – Region: FULL – Obs: Gauge data

✓ Ensemble Average Glitsch
✓ Active January week
✓ MAE ~ Event Fraction
✓ Ensemble Scores tighter with 24h wrt 6h

arw-tom-gep0 MAE
arw-fer-gep1 MAE
arw-sch-gep2 MAE
arw-tom-gep3 MAE
nmm-fer-gep4 MAE
arw-fer-gep5 MAE
arw-sch-gep6 MAE
arw-tom-gep7 MAE
nmm-fer-gep8 MAE
gfs MAE
ens-mean MAE
ens-mean >0.000 BASER
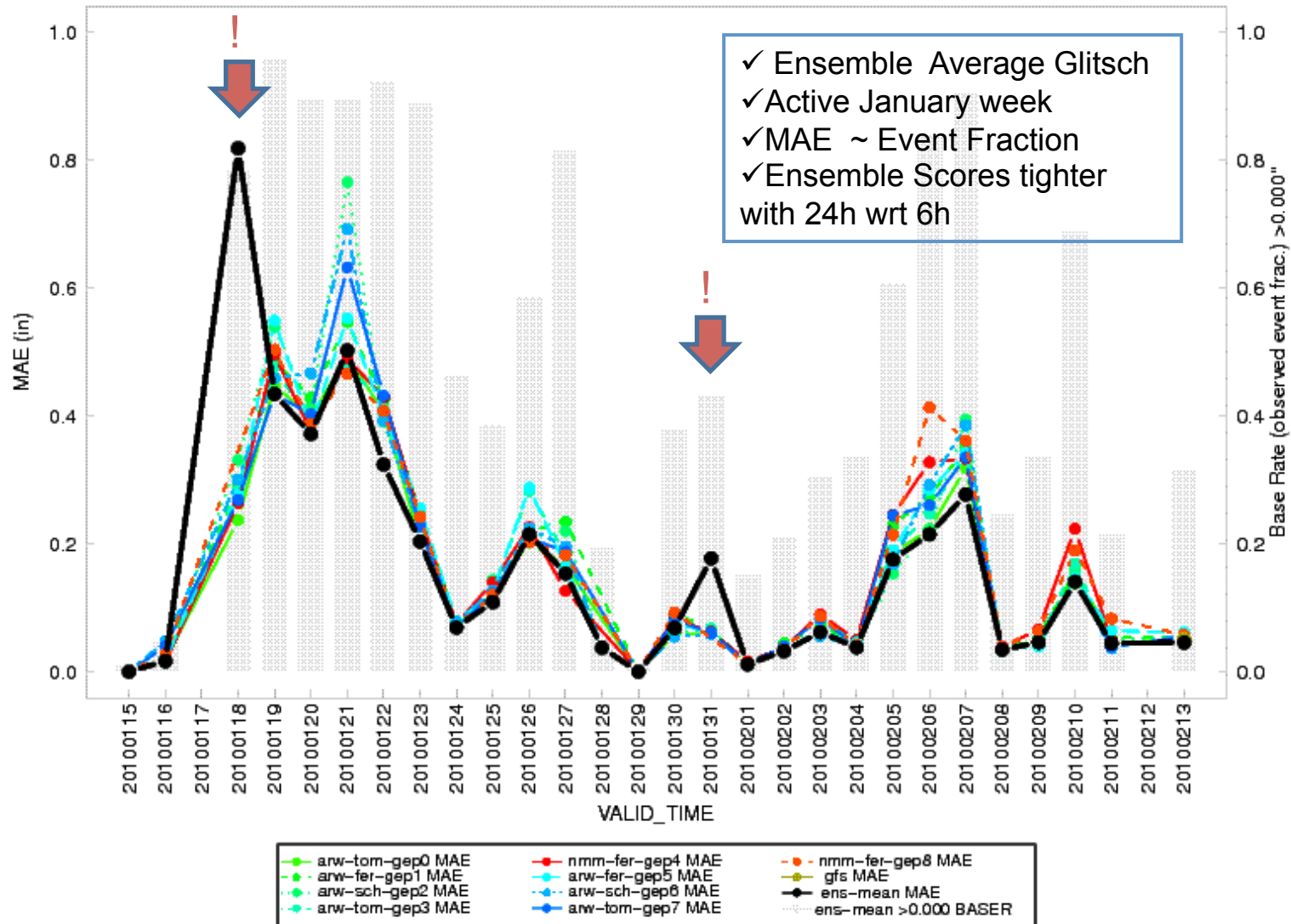
RUN PERFORMANCE for APCP_06 >=0.500" GSS
CONSTANT INIT TIME 2010011712 – Region: FULL Obs: Stage IV
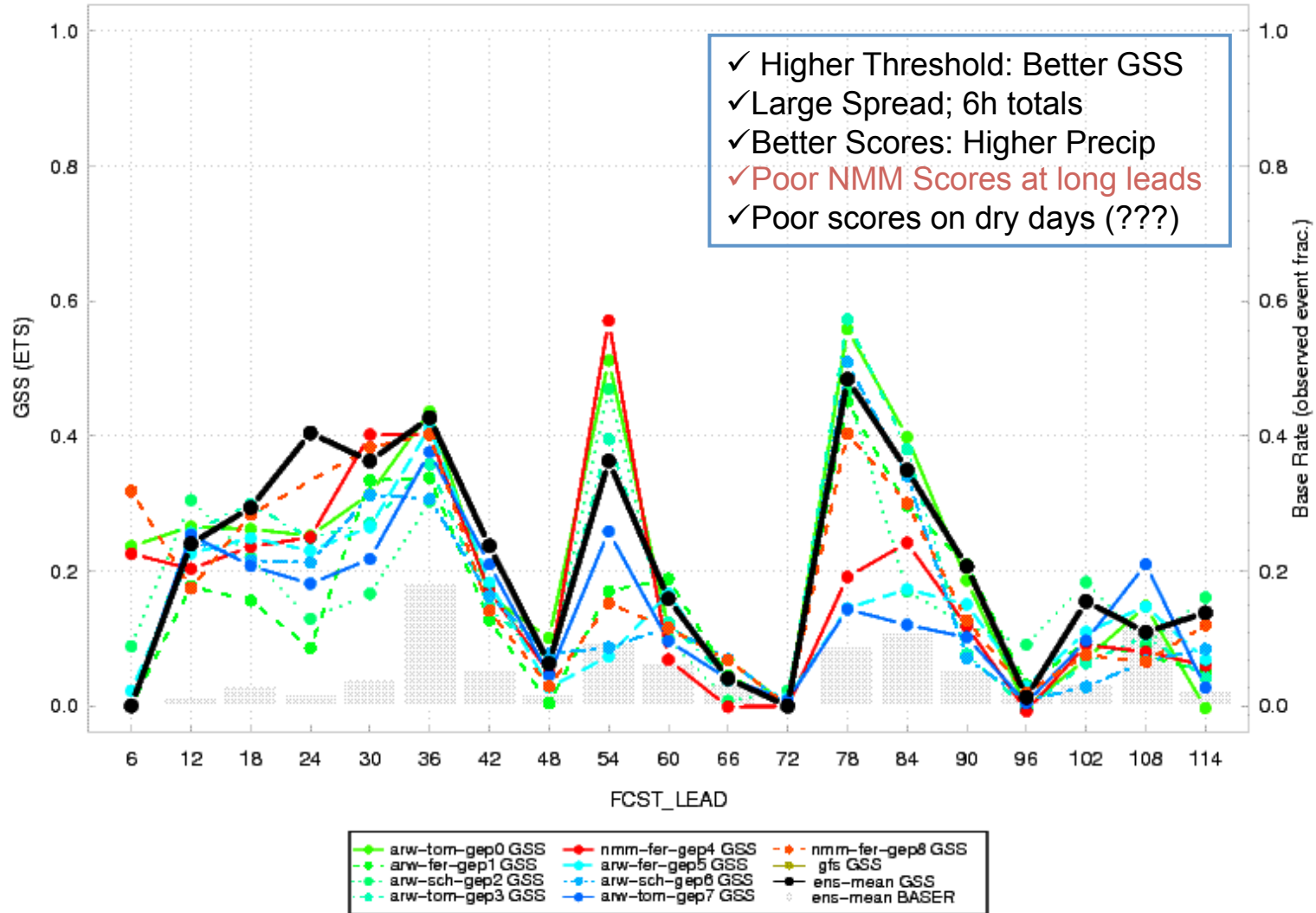
30 DAY AGGREGATE for APCP_24 F24 GSS
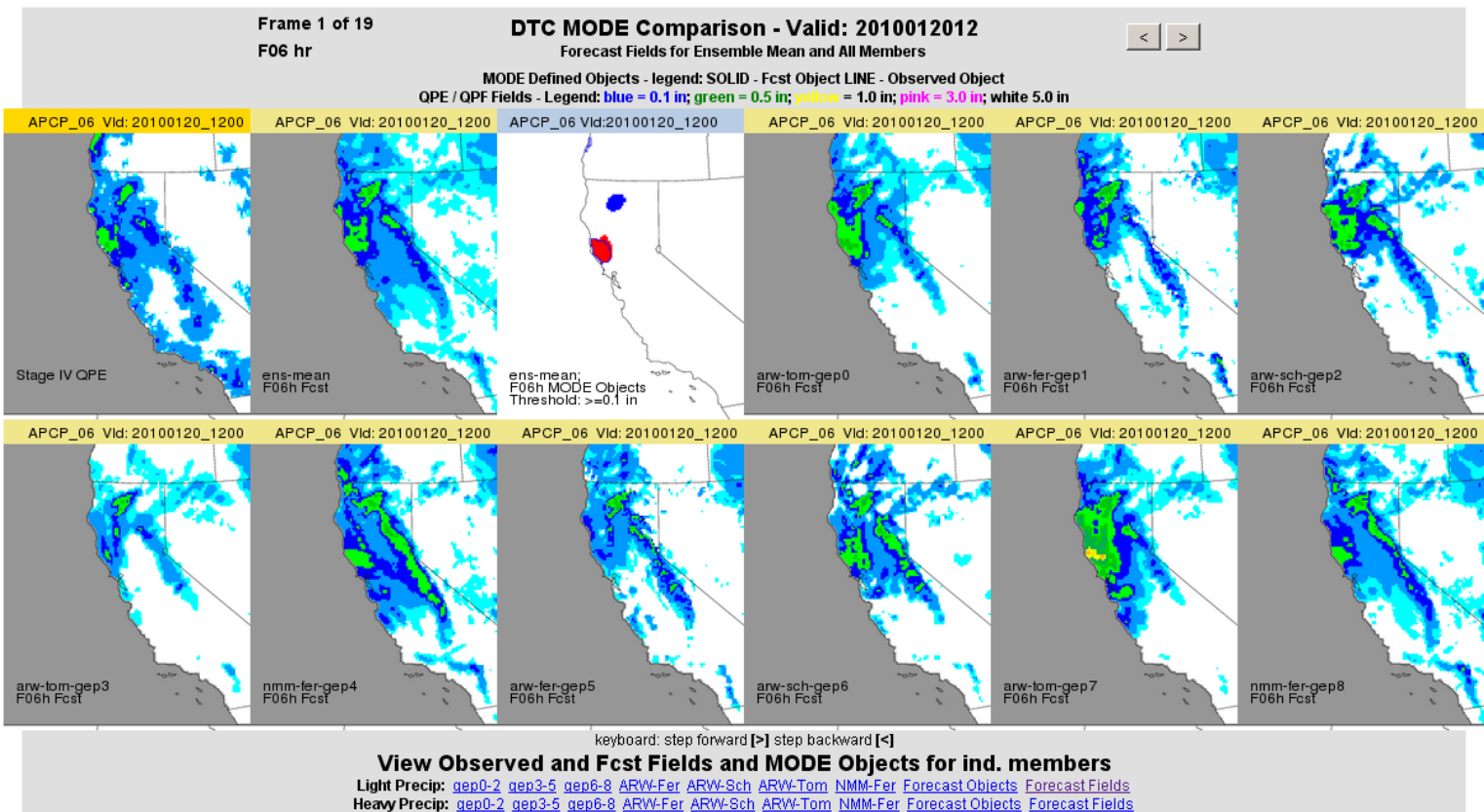OVER THRESHOLD – Region: FULL Obs: Gauge data

January 2010

Observation Rate
0.5095 (8205)   0.4448 (6220)   0.2283 (3192)   0.1223 (1598)   0.0110 (78)

✓ Reflects strong January storms
✓Well sampled except >= 3
✓ NMM members do well at lower thresholds
✓Unlikely Statistical Significancei of ntra-member differences

GSS (ETS)

>=0.010   >=0.100   >=0.500   >=1.000   >=3.000

FCST_THRESH

arw-tom-gep0 GSS
arw-fer-gep1 GSS
arw-sch-gep2 GSS
arw-tom-gep3 GSS
nmm-fer-gep4 GSS
arw-fer-gep5 GSS
arw-sch-gep6 GSS
arw-tom-gep7 GSS
nmm-fer-gep8 GSS
gfs GSS
ens-mean GSS

30 DAY AGGREGATE for APCP_06 F06 FBIAS
OVER THRESHOLD – Region: FULL Obs: Stage IV data

February 2010

✓ Poor sampling during dry period
✓ Poor GFS performance due to resolution difference; GSS better
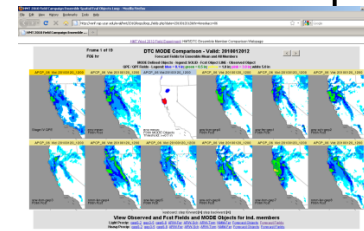✓ Higher thresholds: few samples!
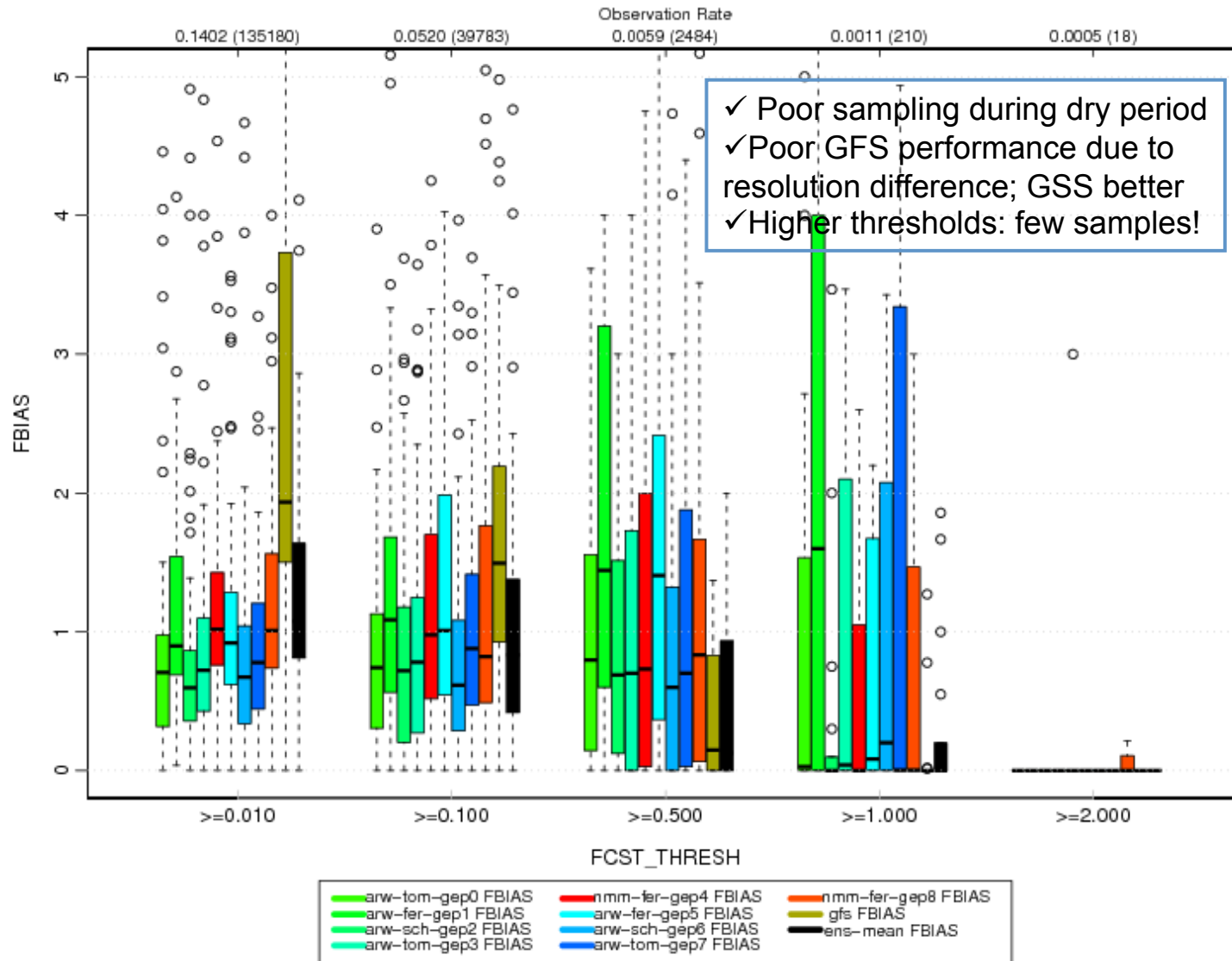
HMT/DTC Model Assessment – 2009-2010 Winter Exercise
Future Work and Plans for 2010-2011 HMT-West

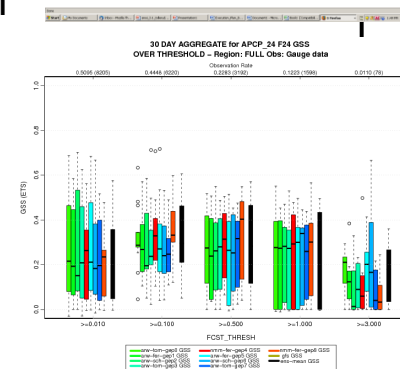### Demonstration Website Development

▪Probabilistic Scoring Options for PQPF
▪Fully Interactive GUI for Score Displays
▪Option for Scenario-specific (i.e., Storm) Verification

Further Research and Case Studies

▪Verification Score Choices; the Best and Worst
▪Object-based Vx; Complementing Standard Vx
▪Data Impact: Gages vs. Grids

Questions that Need Answers

▪Optimal Regional Verification Strategies
▪Verifying Multiple Domains: the AR problem
▪Inter-Model Resolution Compatibility: GFS vs. WRF
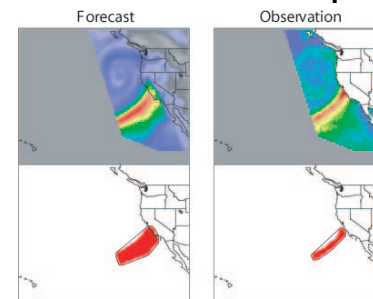
Send answers to Edward.Tollerud@noaa.gov or jensen@ucar.edu