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Mitigation of Site Specific Errors

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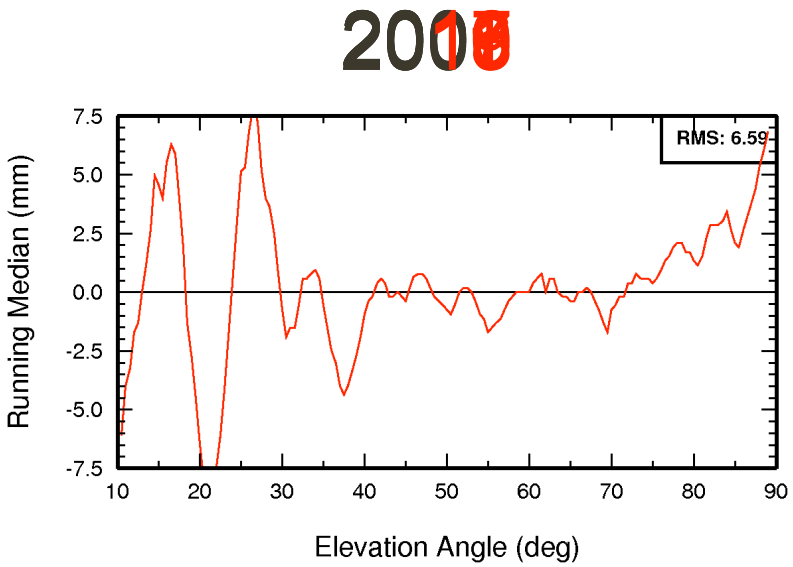
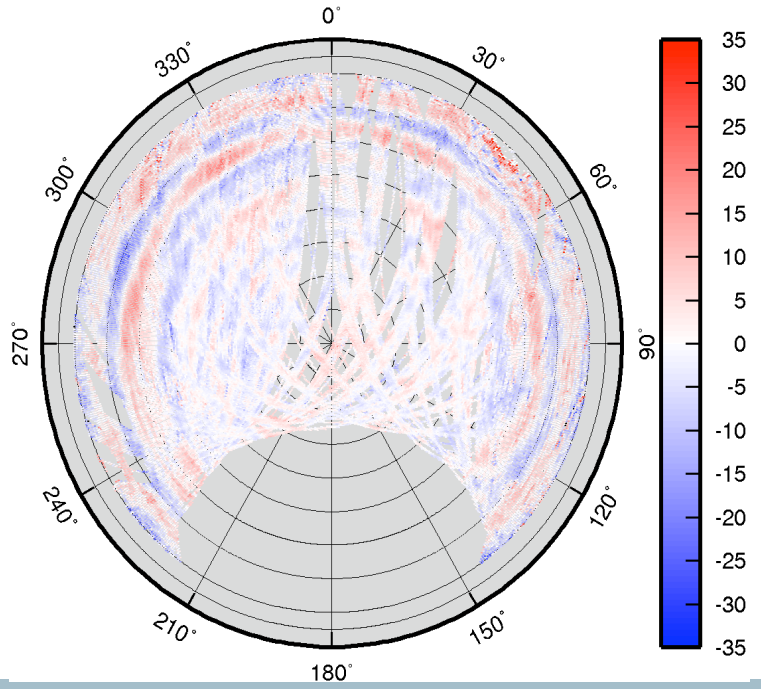
Site - Elevation Dependent





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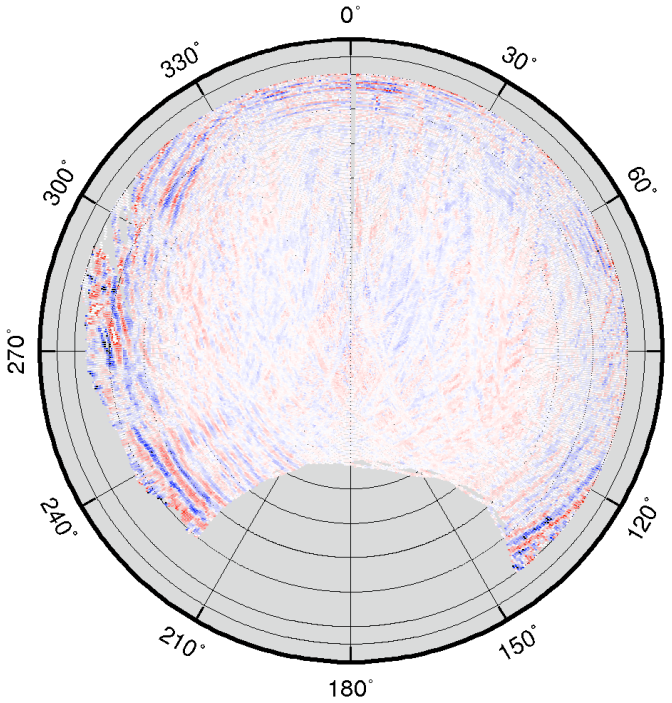
Site – El/Az Dependent



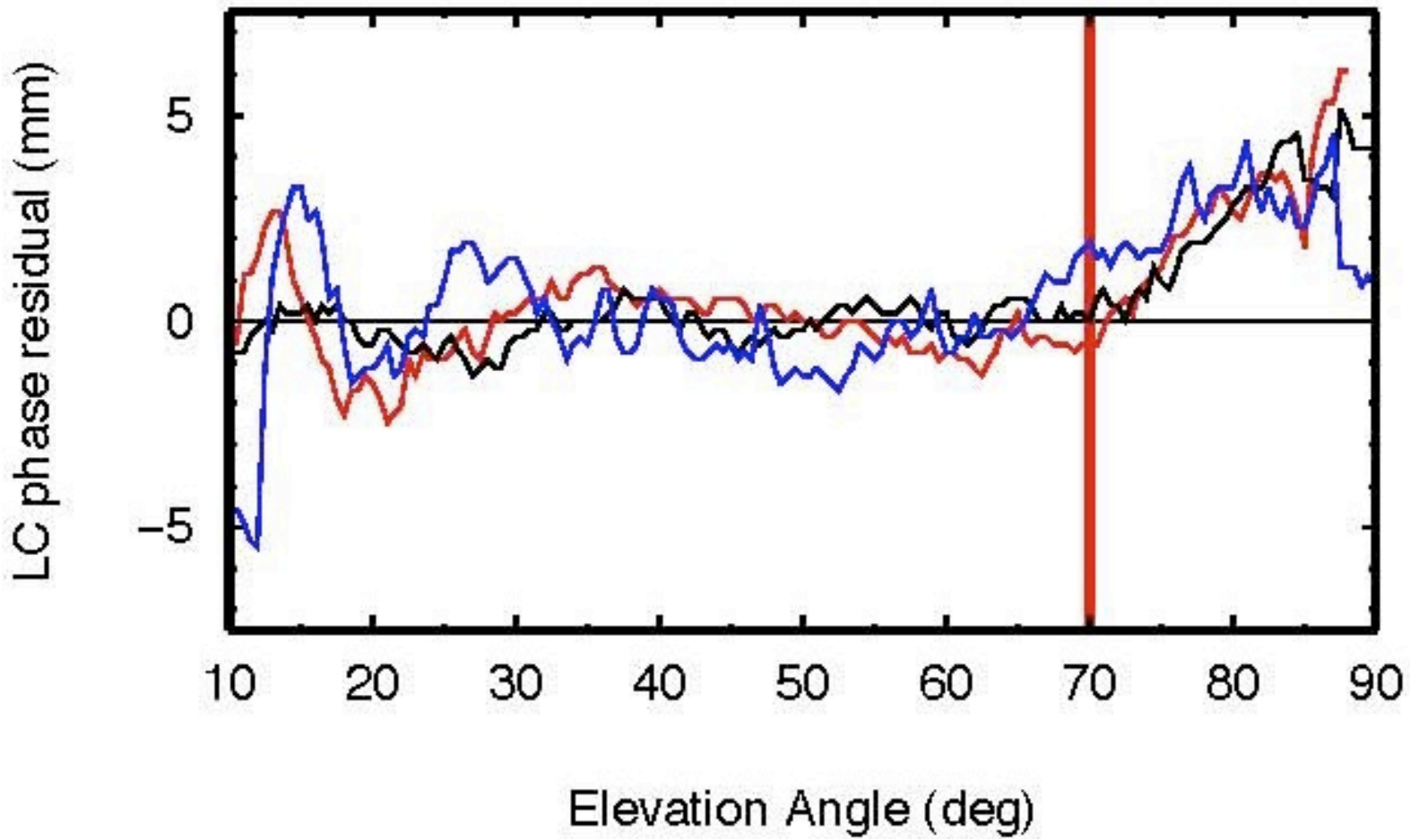






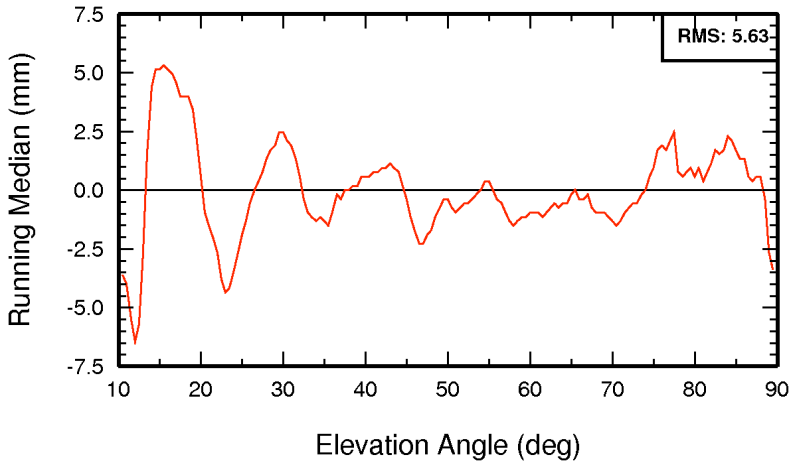

Site – Unmodelled Radome

CEDU, KARR, TOW2

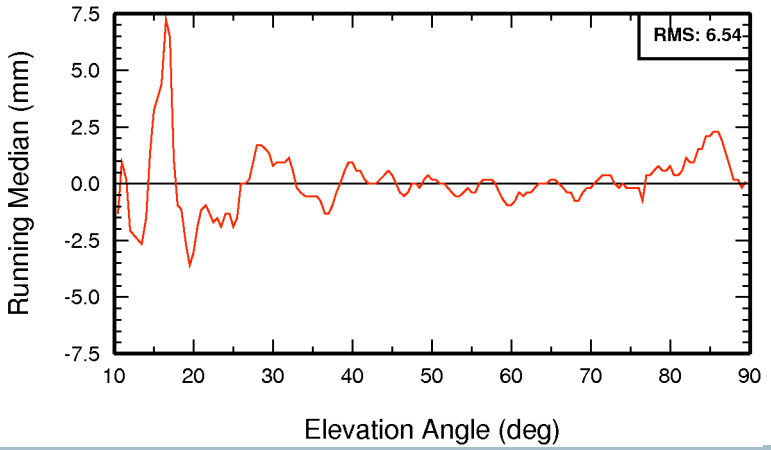


Site - Monumentation

DUND



WHKT



Equipment Change -KARR

120 Days Before

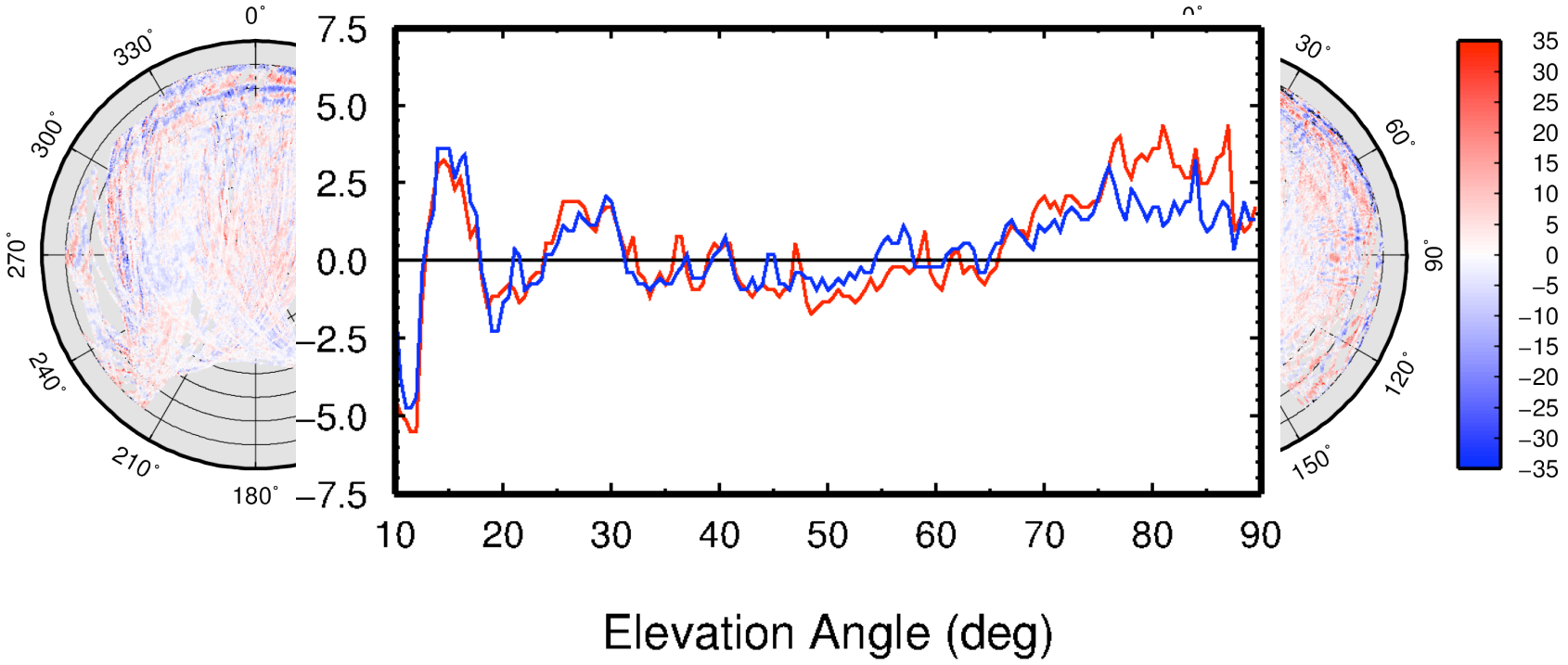
Ashtech Uz-12

AOAD/M_T AUST

120 Days After

Trimble NETR8

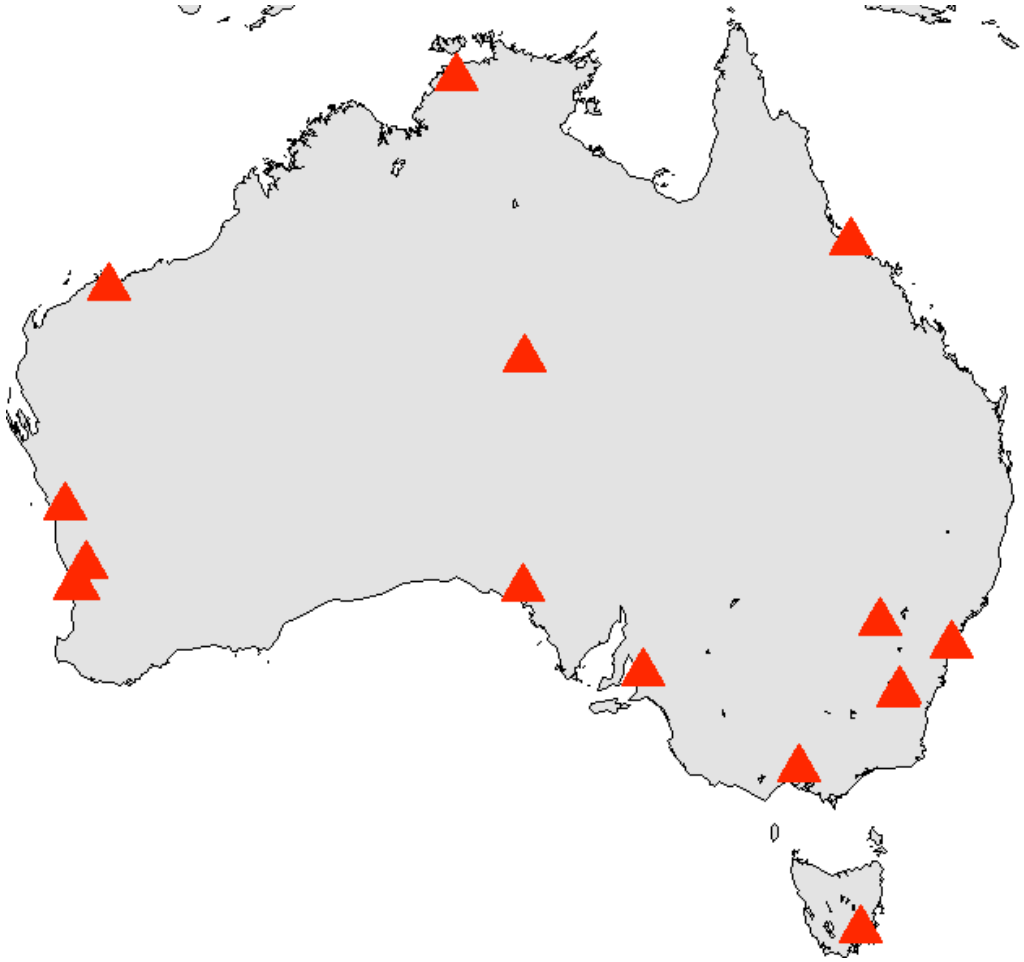
TRM59800.00 NONE



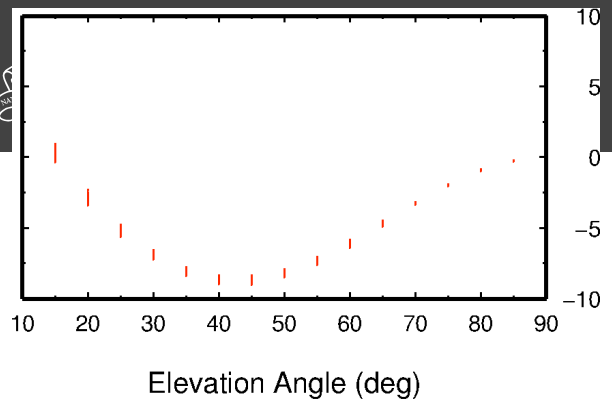
ESM is instrument independent

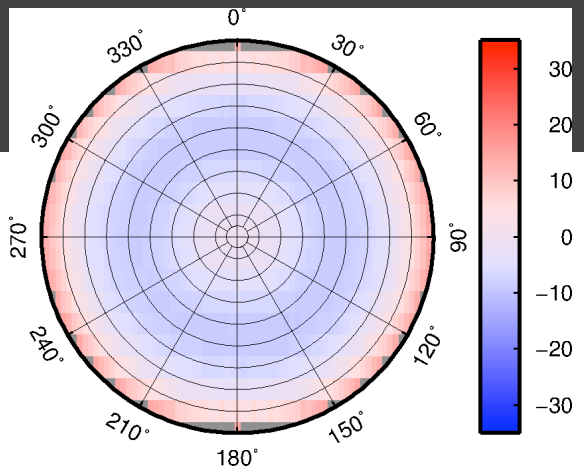
Method – Processing Technique

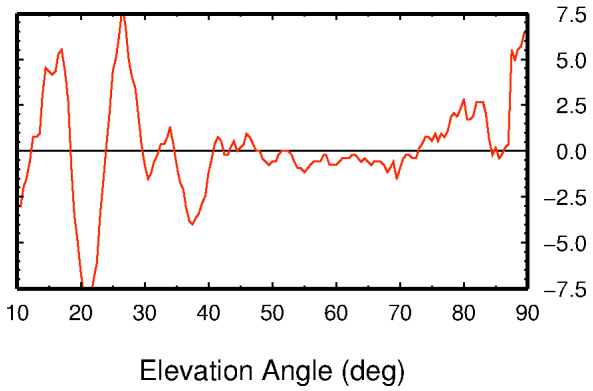
- GAMIT 10.4
  - VMF1
    - Every 2 hours
    - 2 atmospheric gradients
    - Hydrostatic values estimated from (ECMWF)
  - 2nd & 3rd Ionosphere Corrections
  - Atmospheric Loading Corrections applied at Observation Level
  - Stations Unconstrained
  - Orbits Fixed

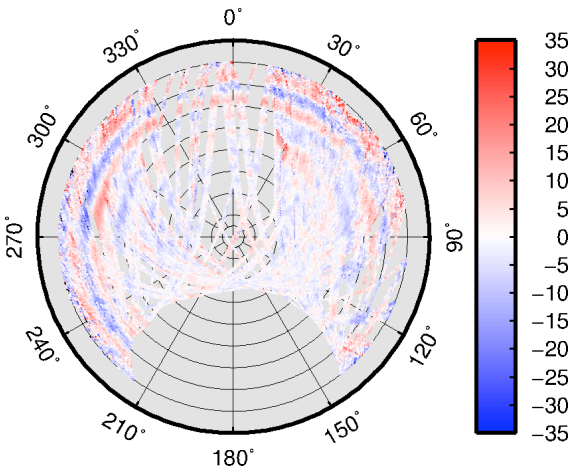


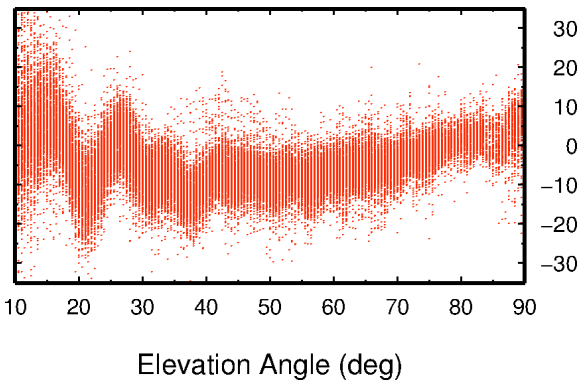
Creating the Correction Map

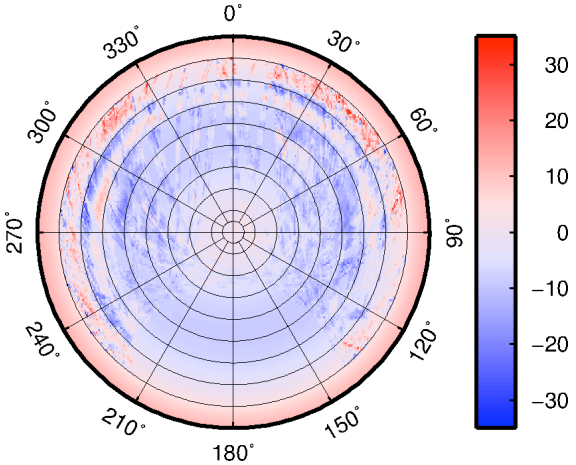






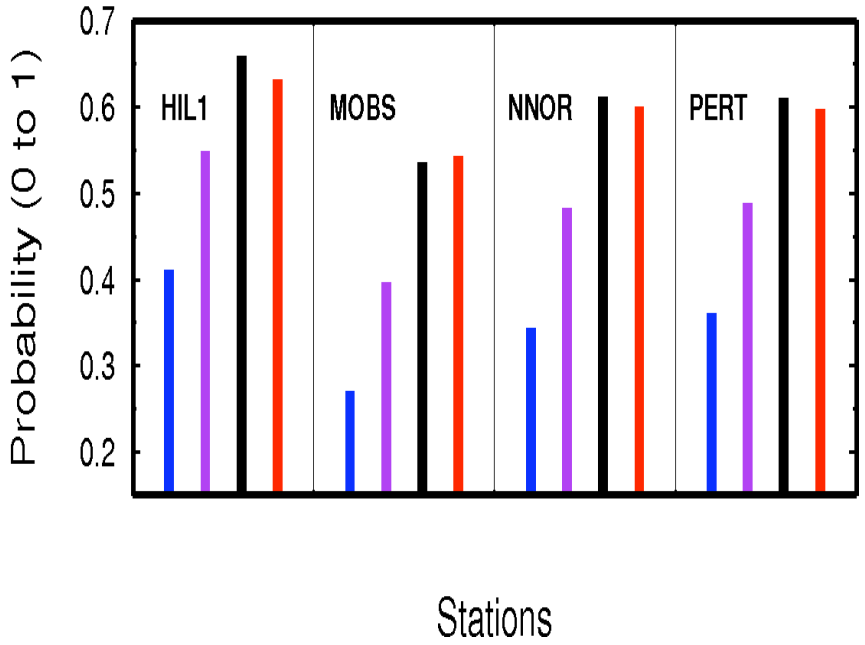


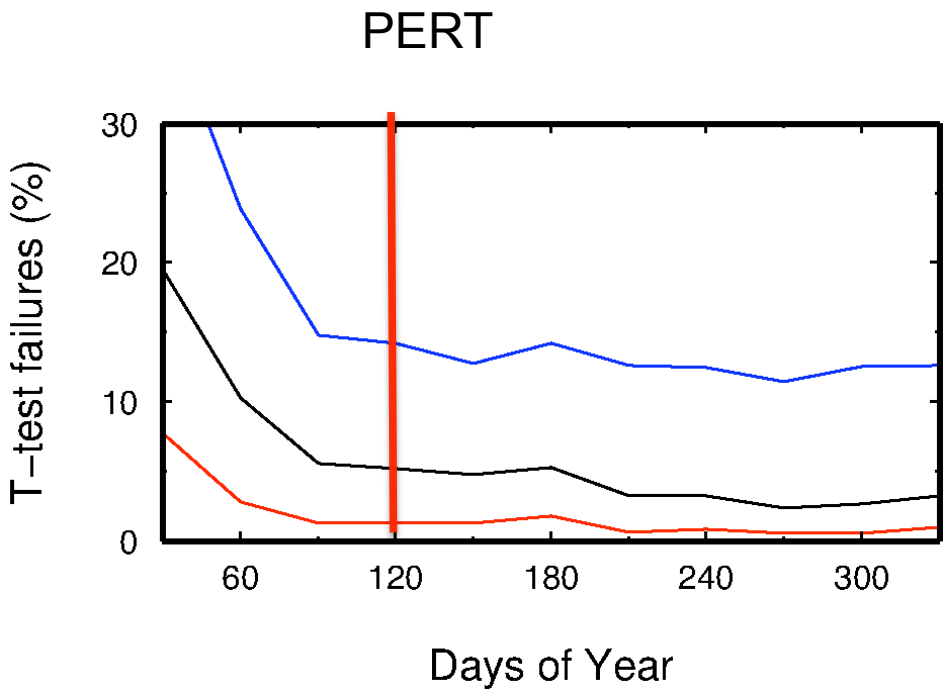




Method – Summary

- Block Median, Equal Area, Piecewise linear
- Grid Spacing 2,1,0.5,0.25 degrees
- Stacking Interval

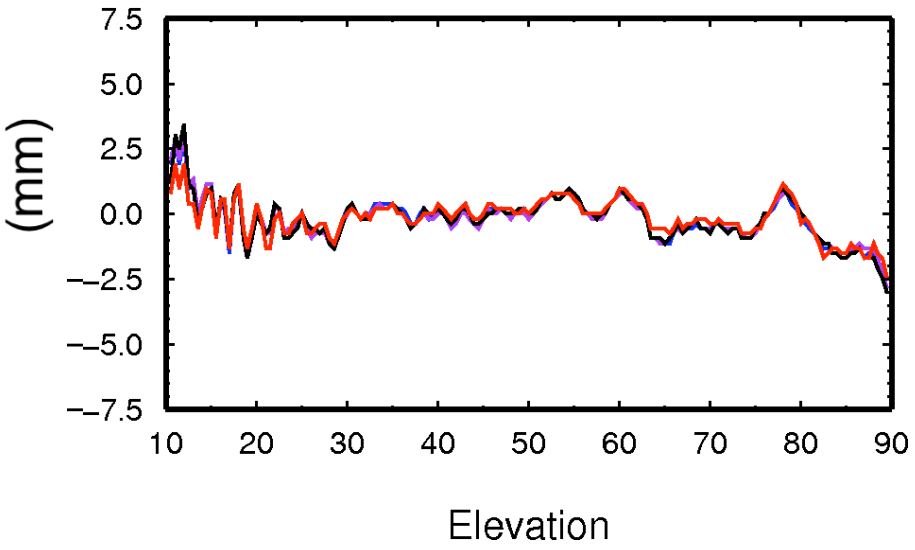




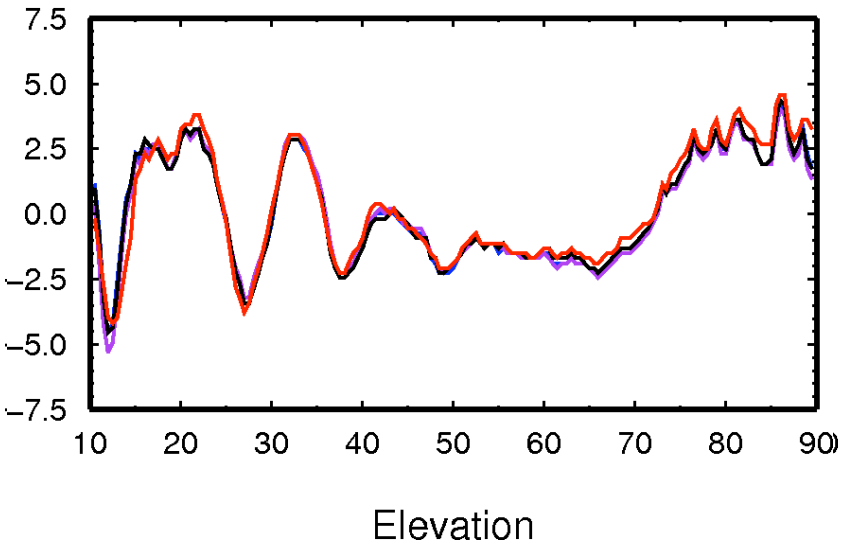
Network and Weighting Dependency?

Standard, No Elevation Weighting, Short Baseline, Regional

STR1



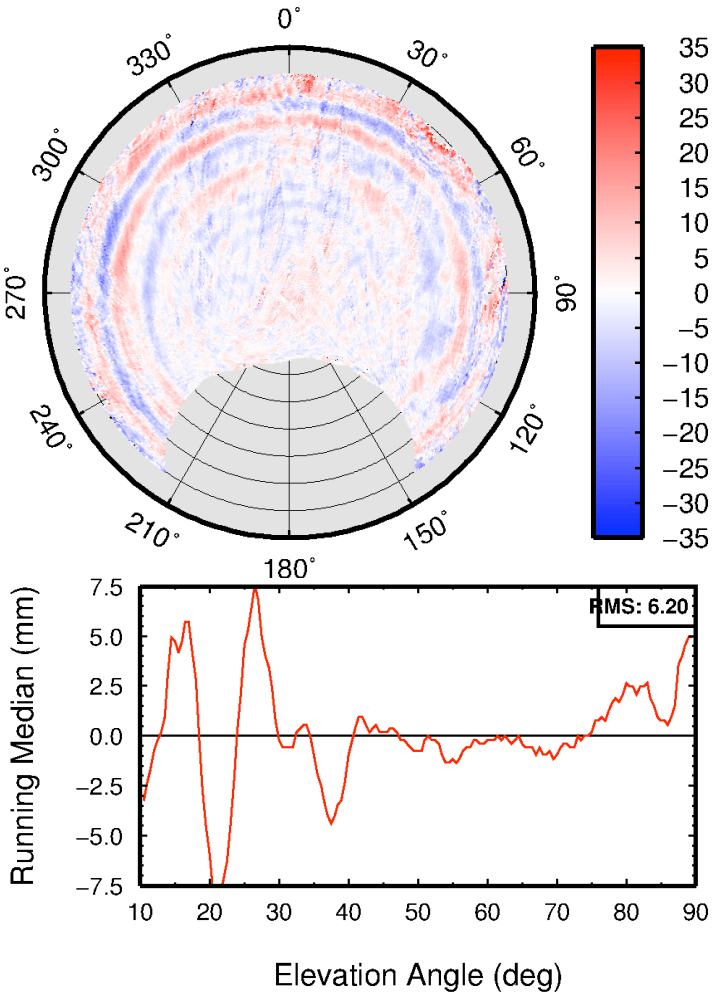
HOB2



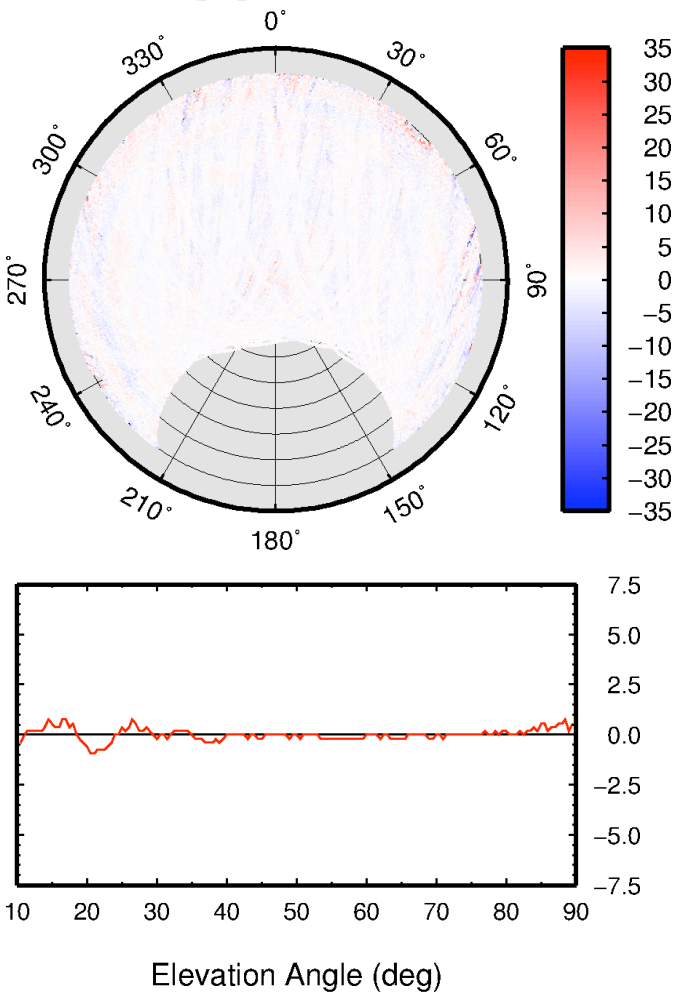
ESM is independent of network geometry and weighting

MOBS

No ESM



ESM Applied



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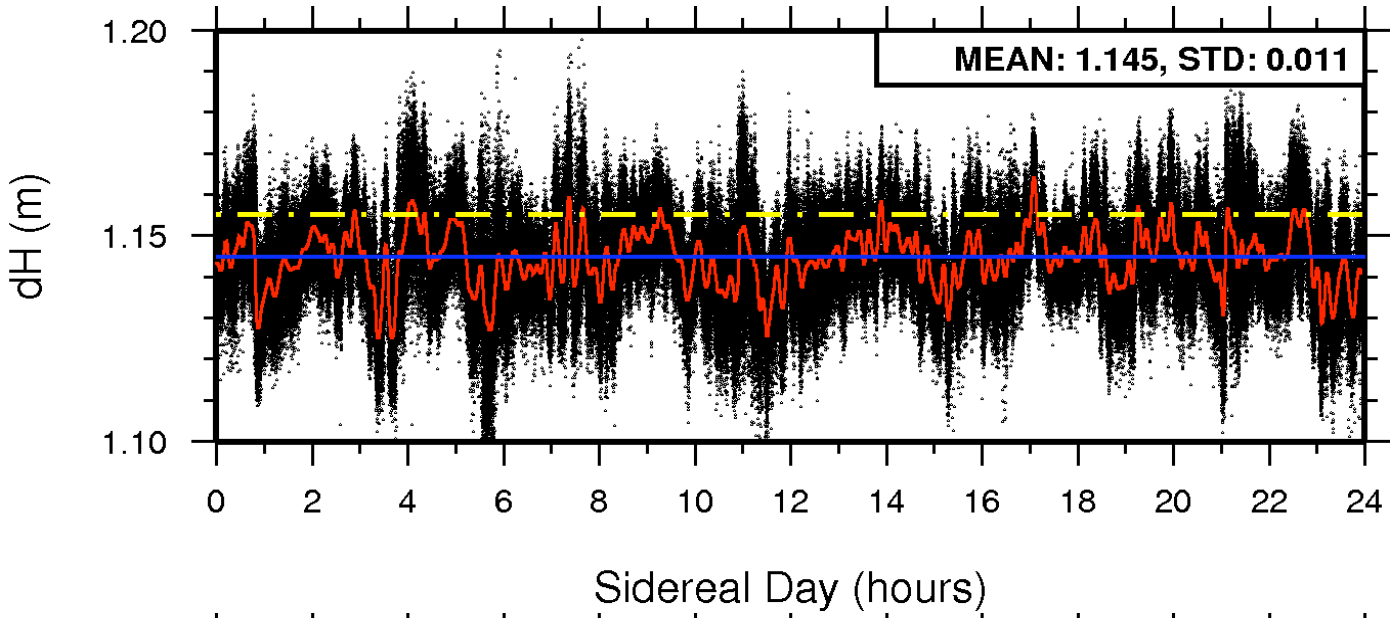
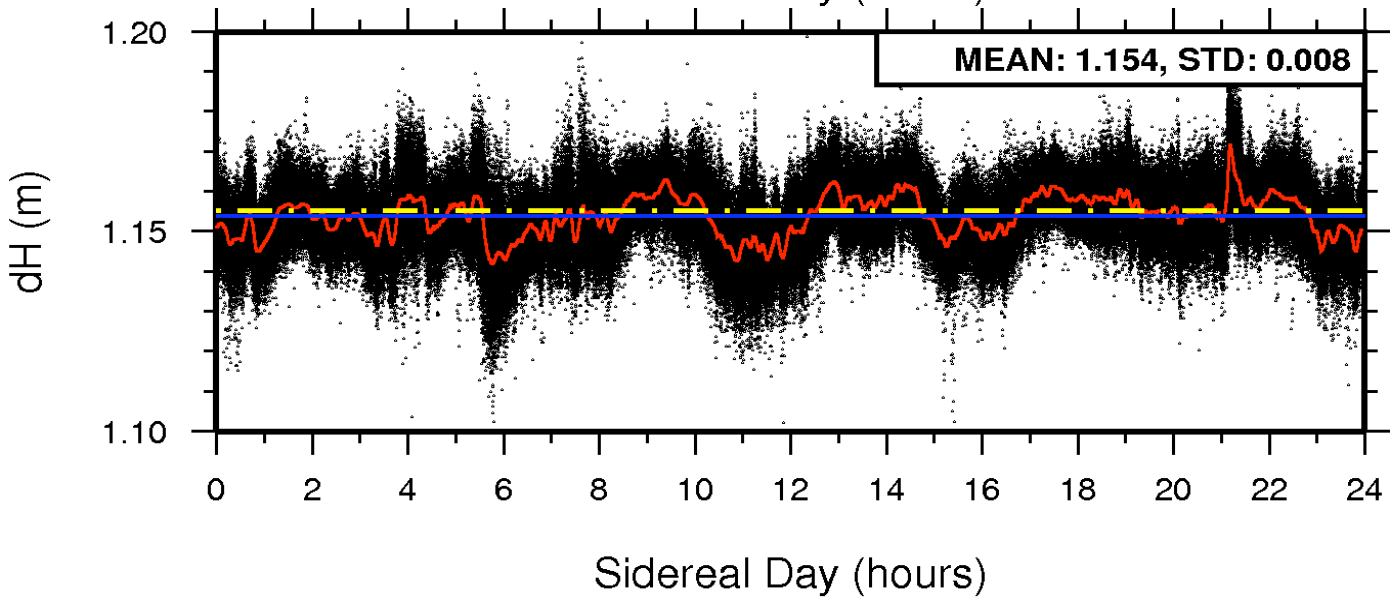
Real-time solution

Without ESM



With ESM



Conclusion

- Site Specific errors are significant and need to be addressed.
- Need a resolution of 0.5 degrees and 120 days of observation
- Network and Weighting independent
- Improves accuracy and precision
- Questions ?
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