Suggestions for New Research for the CrIS SDR Team

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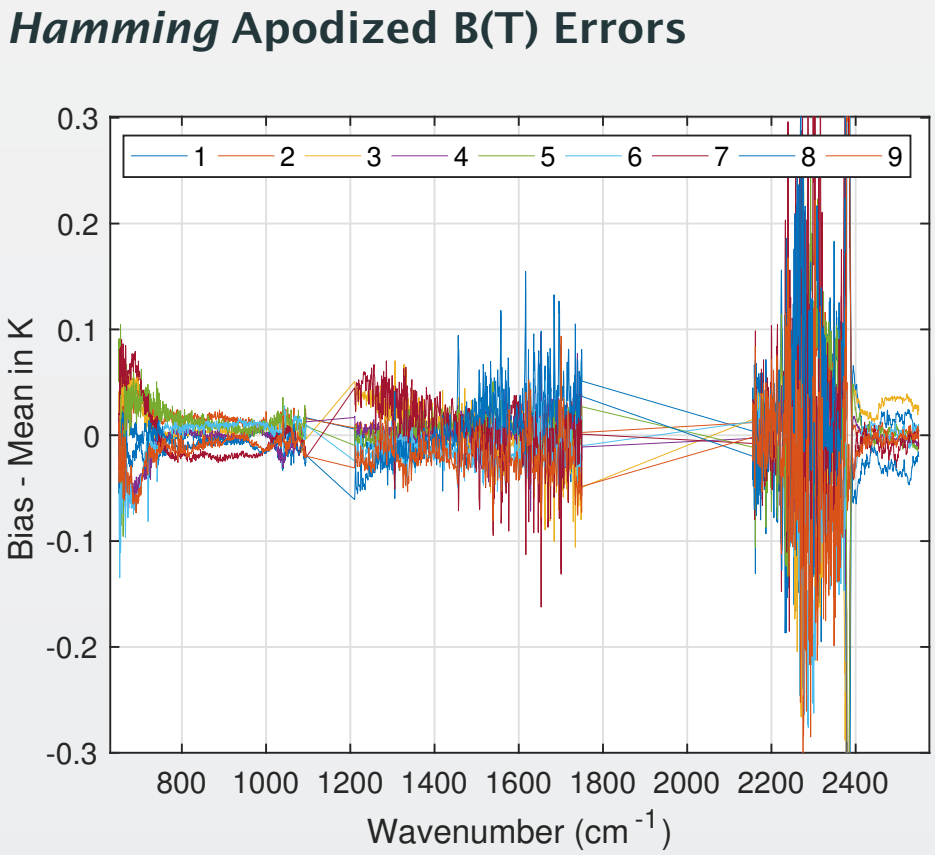
Doppler shifts in CrIS data well known and easy to calculate.

NWP bias correction unlikely to have correct terms to handle these.

FSR in midwave max effects are ±0.05K *Hamming apodized*

Could do as a post-processor for NWP (Walter Wolf)



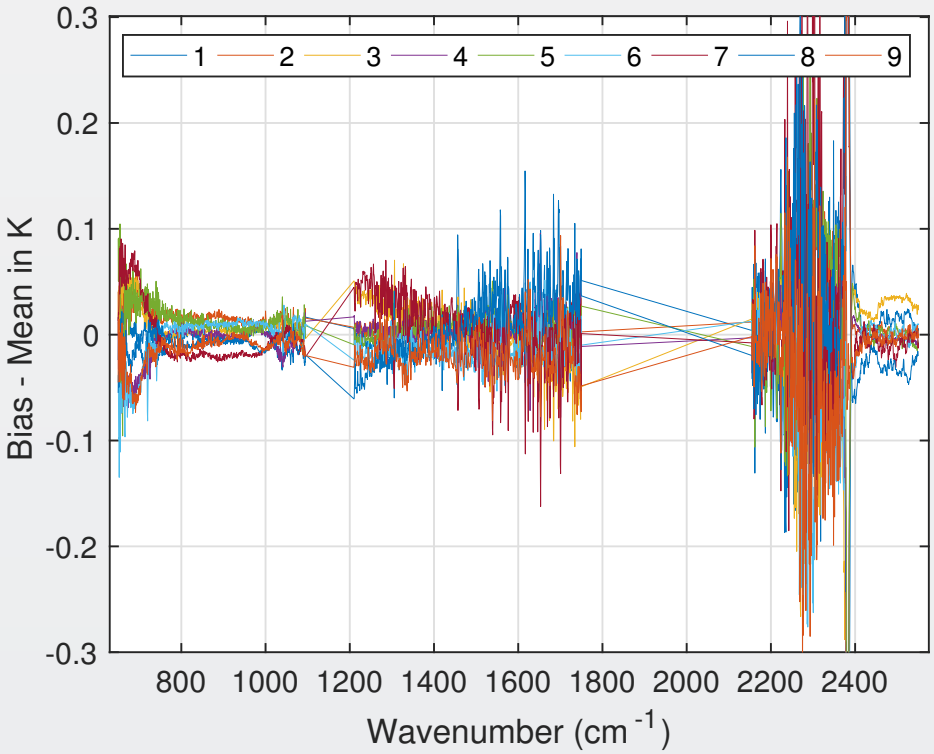
We could also adjust SNPP and N2O Neon to be identical for reprocessing.

Just bullets

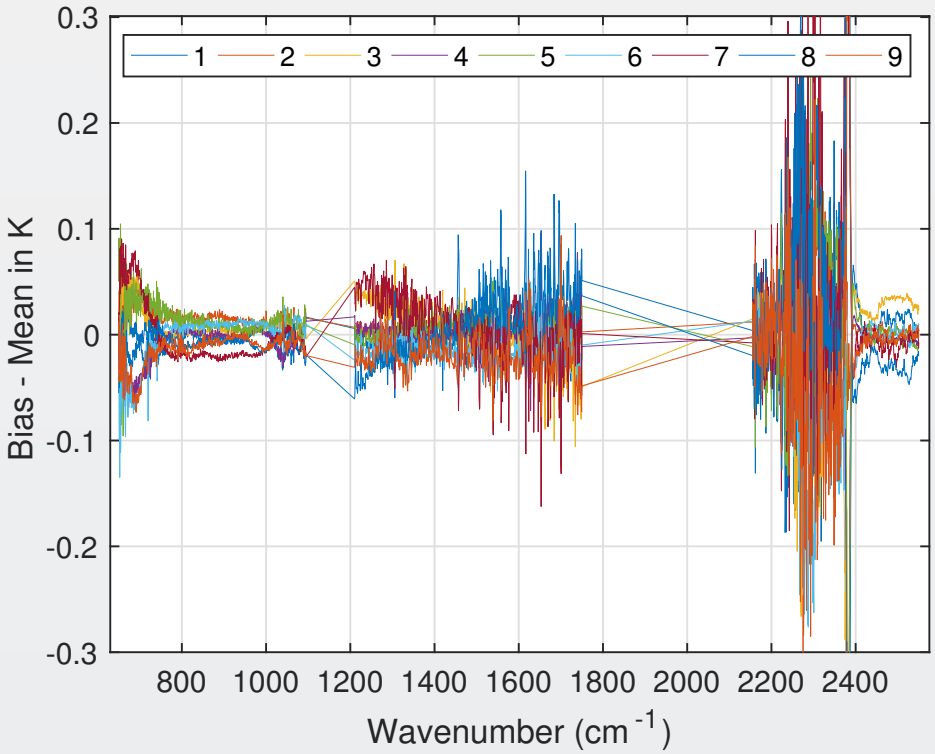
- We generally only examine near-nadir FORs (15 / 16) in detail.
- Users, of course, use all FORs
- Examine them here for (a) clear, (b) all-scenes, especially with regard to inter-FOV differences.

Two graphs side-by-side

Raw Clear FOV BT diffs



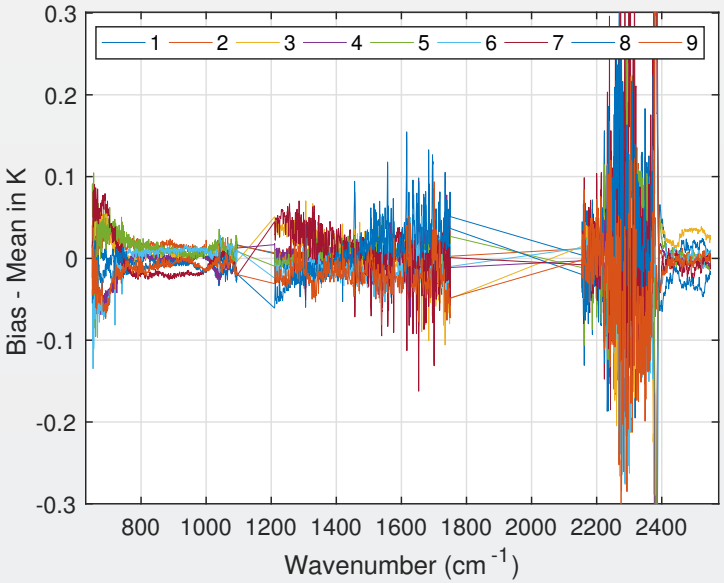
NWP Bias Clear FOV BT diffs



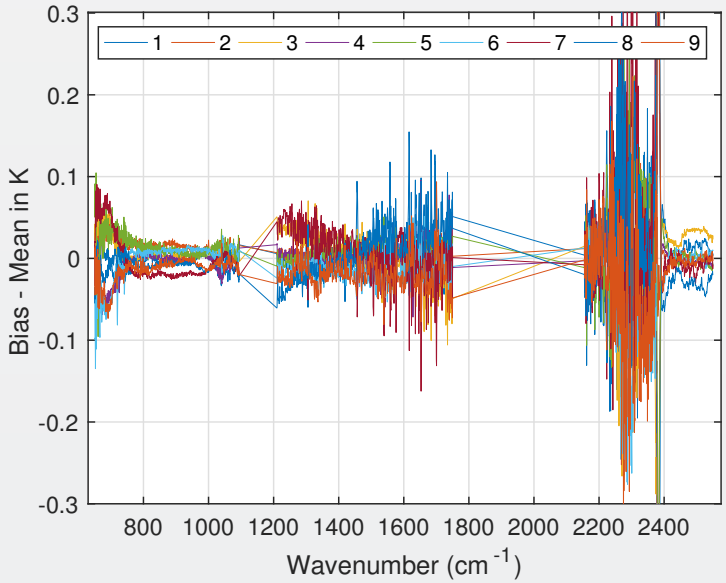
Although clear scenes contain all FOVs, there are 3-4X more near nadir than at extreme scan angles.

Two graphs top, one centered bottom

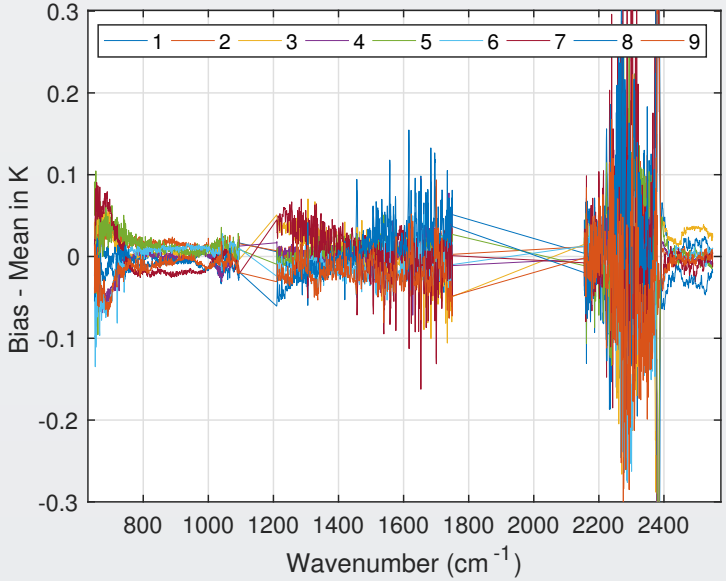
Secant Diffs with FOR



Mean Secant Diffs



Example: FOV9 Secant Corrections



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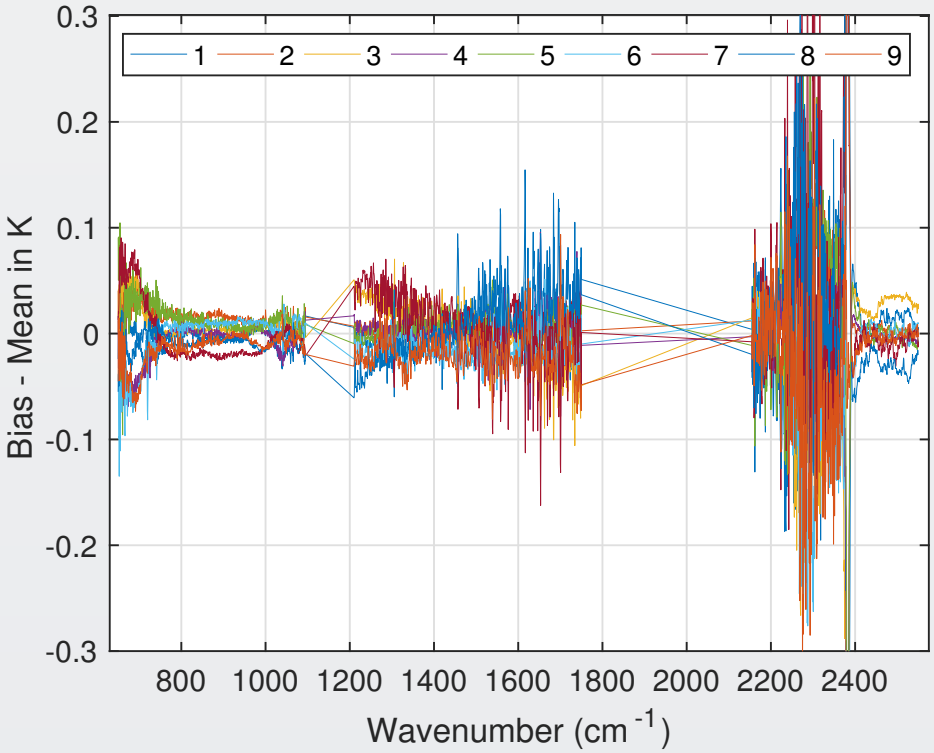
- "Best?" intercalibration of SNPP and N2O is from AIRS SNO double diffs.
- AIRS will likely not be up, or operating properly, for J2
- Is IASI good enough?
- Or, can we use statistical sampling (more later on this)

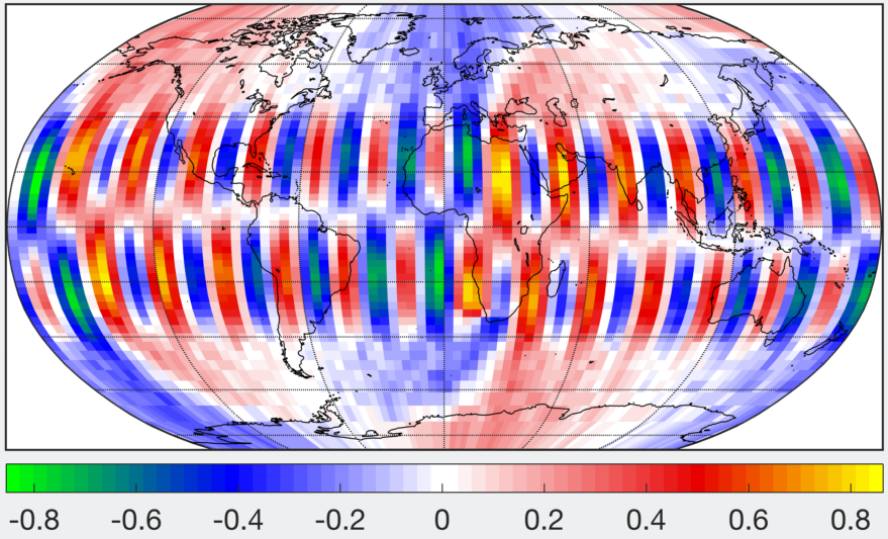
Latitude Sampling



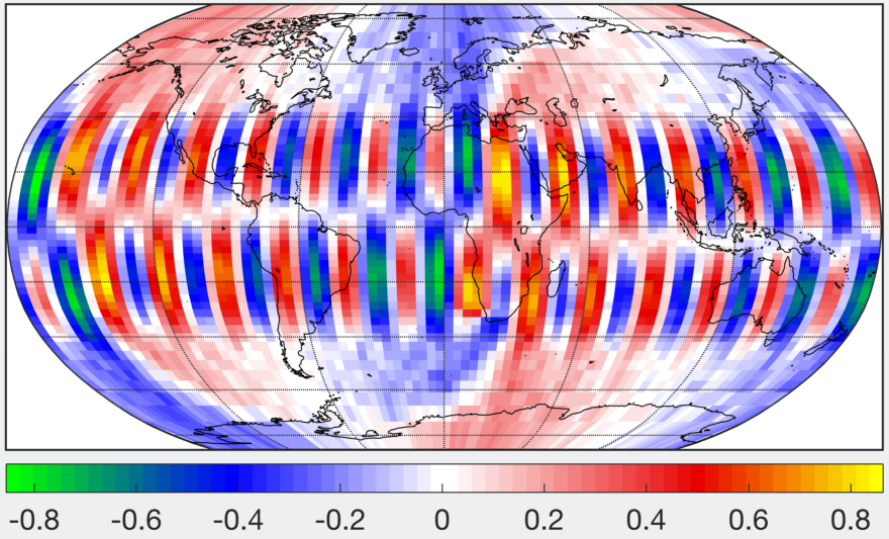
Although scene type sampling is very different for AIRS and IASI, results are fairly similar. Later will compare with area weighted sampling (for 900 cm^{-1} region only).

Two graphs top, graph bottom left, text bottom right

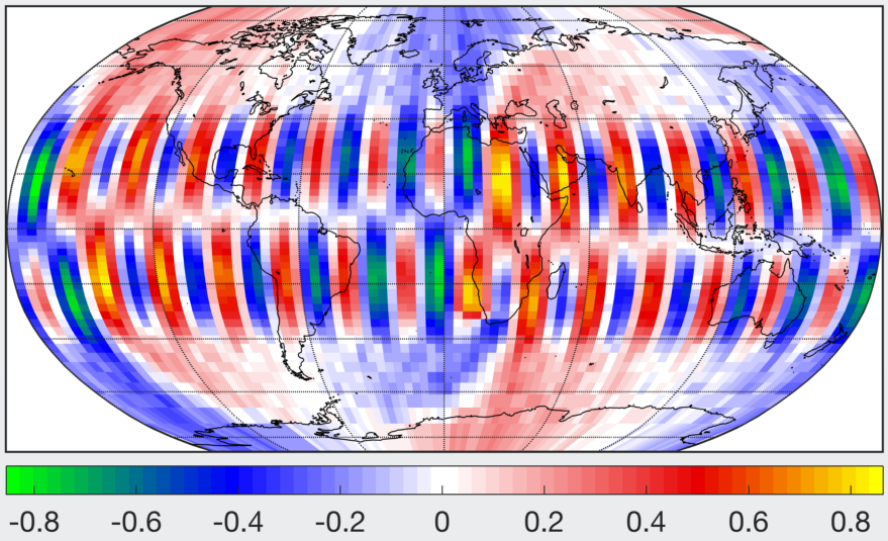
N2O - AIRS



SNPP - AIRS



N2O minus SNPP (32% more variability)



- N2O minus SNPP more variable!
- Due to larger time differences!
- AIRS SNO: 0.021 K (0.05K unc?)
- IASI SNO: 0.010 K (0.05K unc?)
- Global all FOR statistical differences: 0.013 K