Using AIRS:CrIS SNOs to compare SDR product with and without Polarization Correction

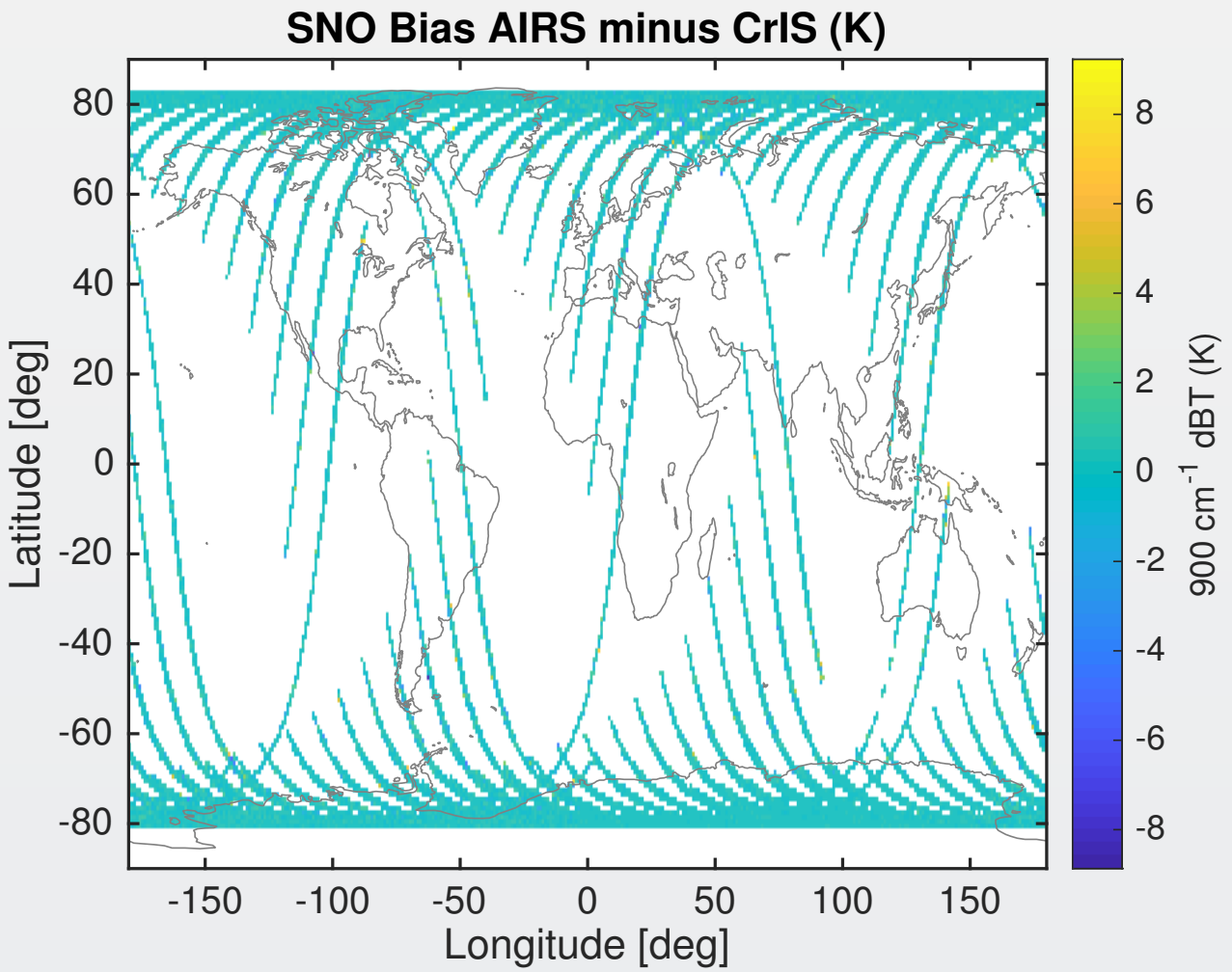
C. Hepplewhite, L. Strow

June 4, 2019

Overview

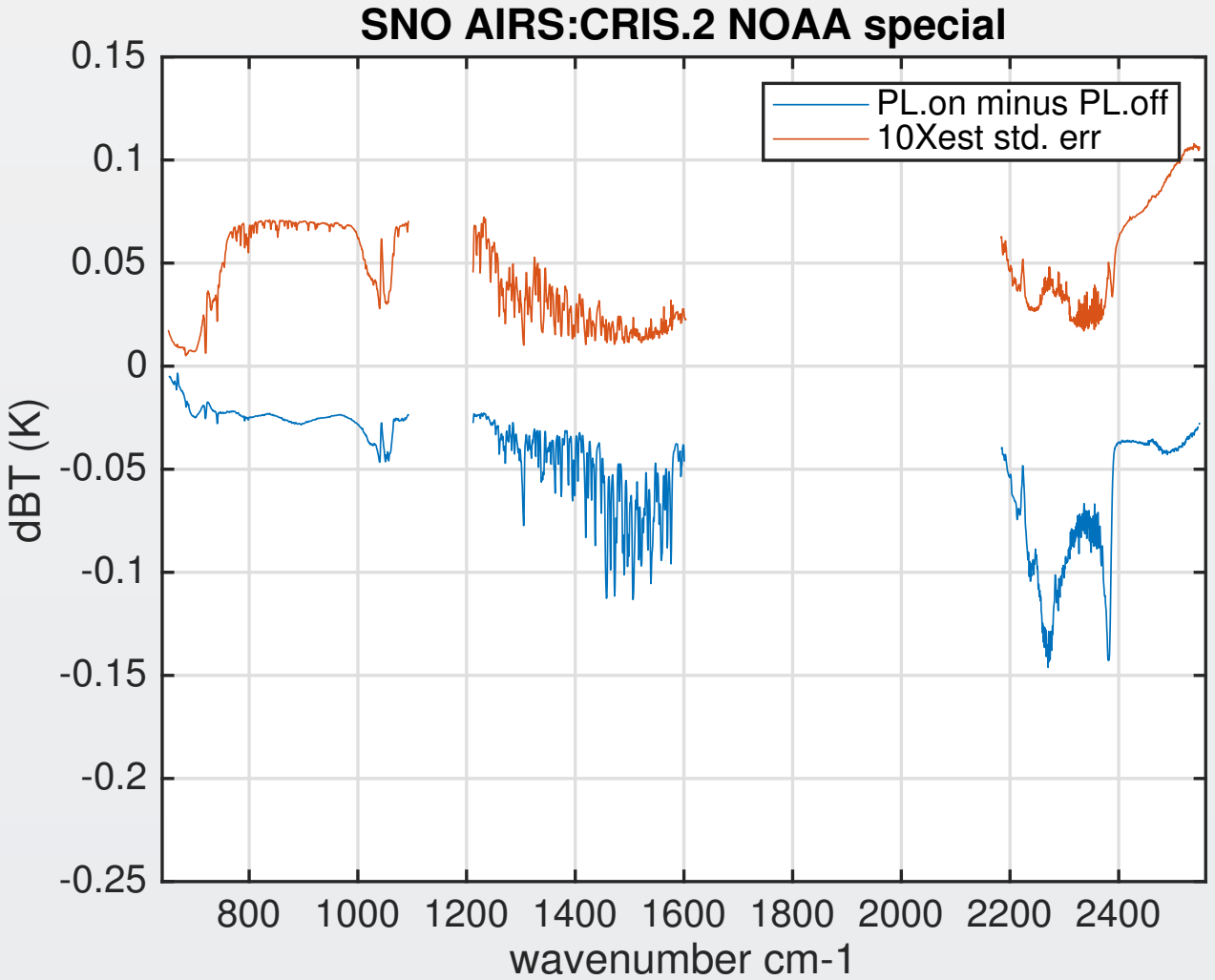
- Use closely matched observations between AIRS and J1-CrIS to determine differences due to polarization correction applied to CrIS.
- NOAA ADL SDR data are available for period December 2018 to January 2019 (2 months), with and without polarization correction applied.
- AIRS L1C data are available for the same time period.
- Simultaneuous near over-pass observational pairs are obtained with seprations between AIRS and CrIS FOVs of less than 10 minutes and 8 km.
- SNOs for AIRS FOVs 43:48 and CrIS FORs 15 and 16 are used.
- Approx. 242,000 SNO pairs are obtained.

Distribution Map



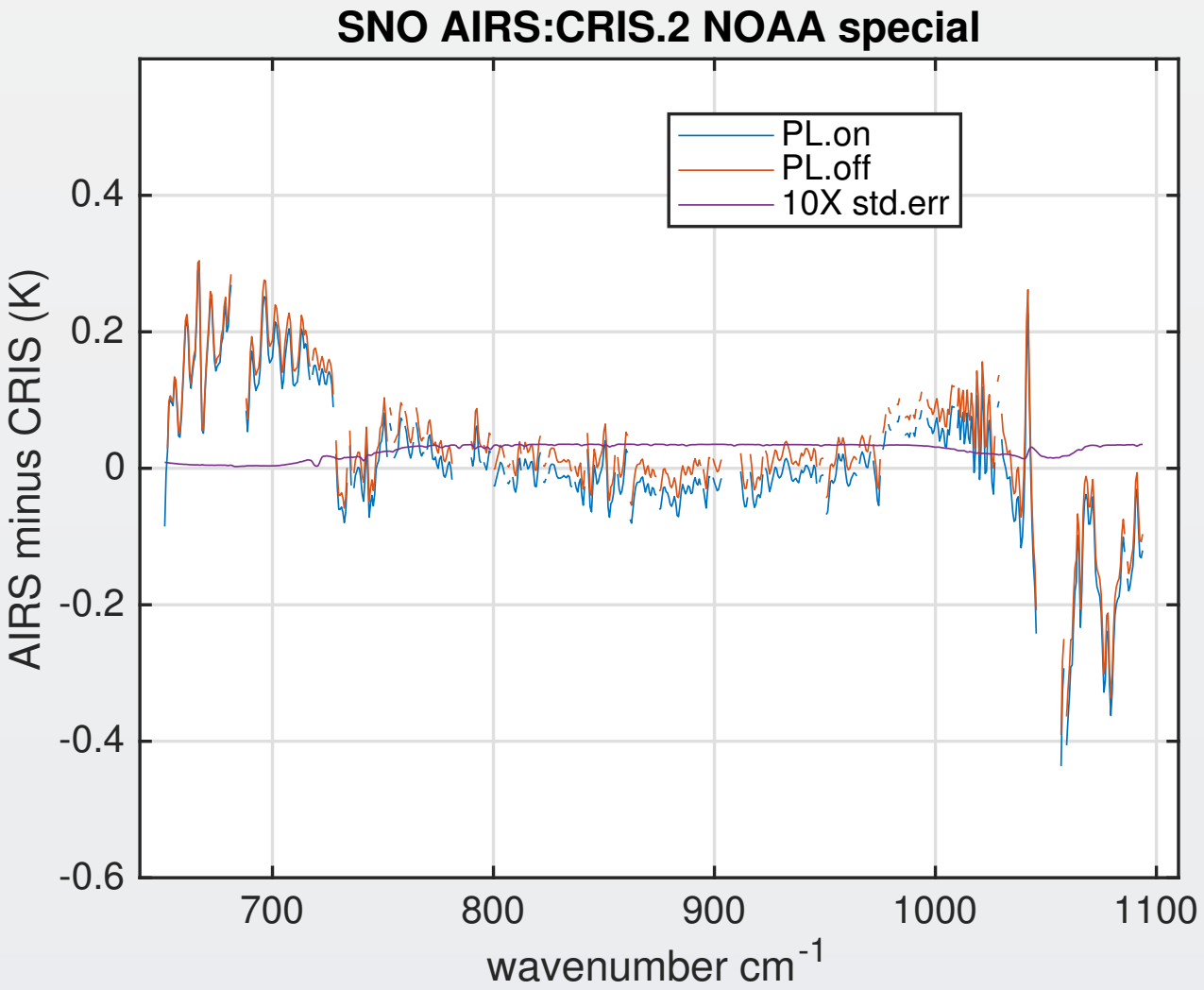
Magnitude of the polarization correction

- Using AIRS as the transfer standard, take the double difference: *(AIRS minus CrIS with correction) minus (AIRS minus CrIS without correction*



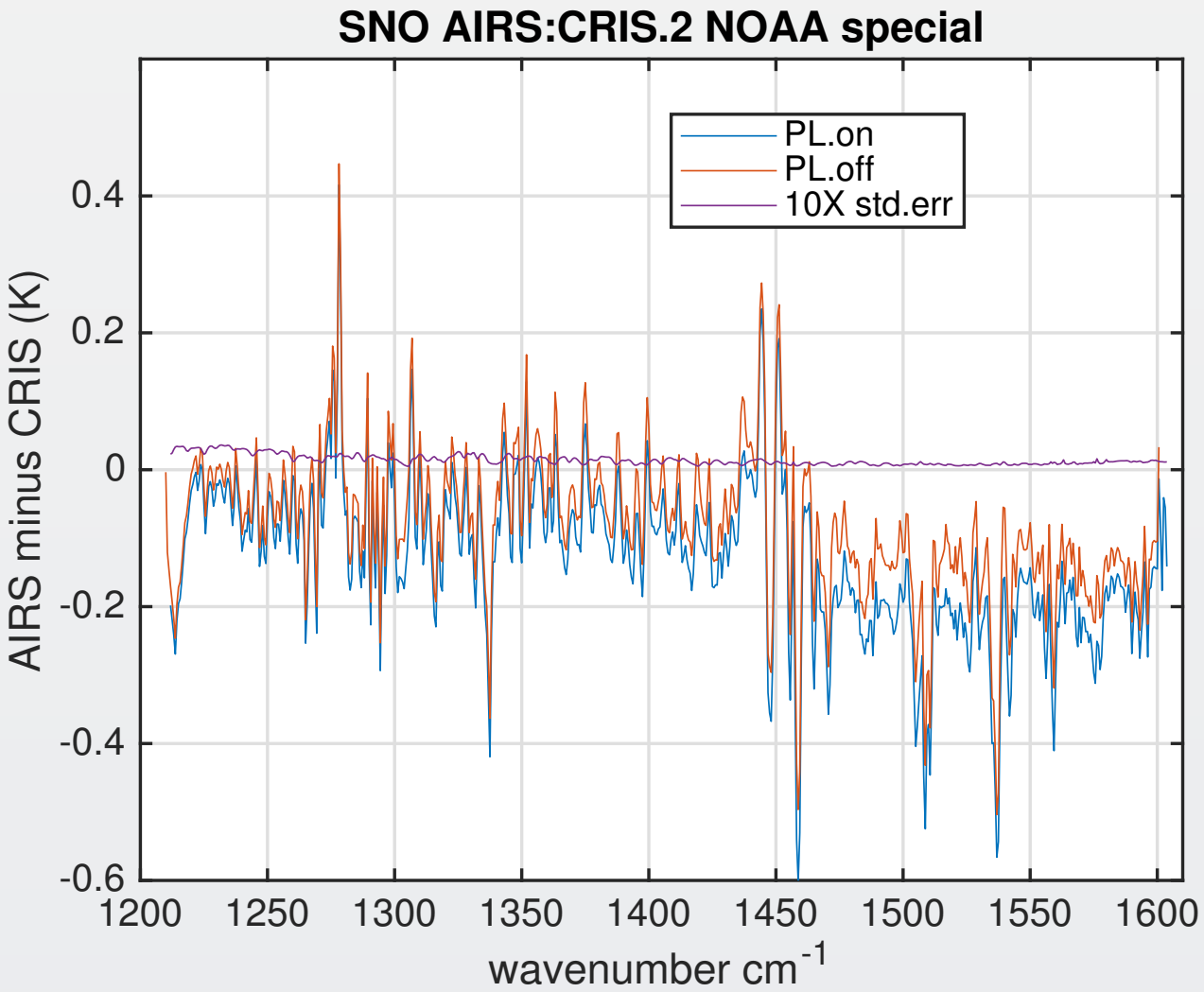
Impact of the polarization correction on the bias with AIRS

- LW band:



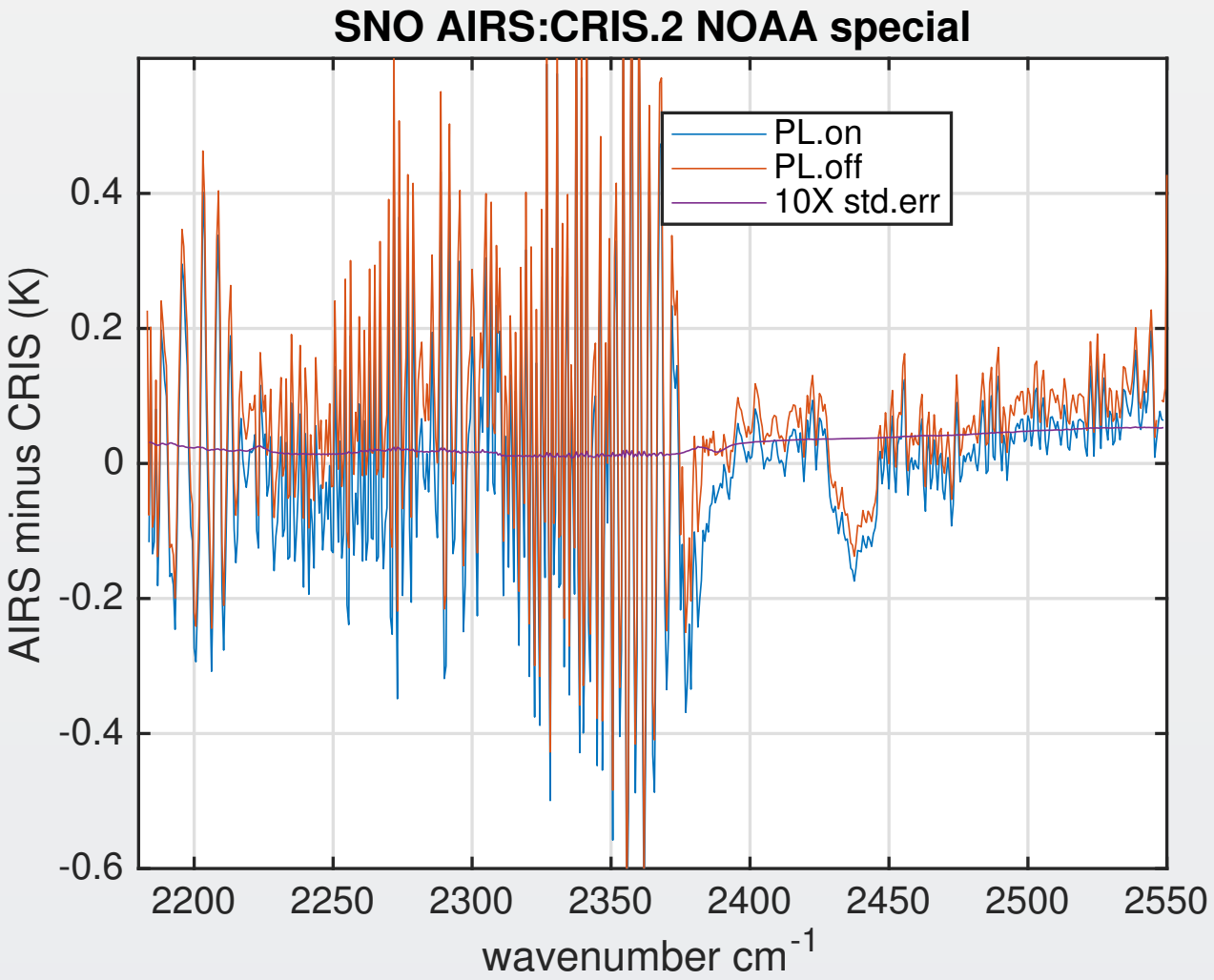
Impact of the polarization correction on the bias with AIRS

- MW band:



Impact of the polarization correction on the bias with AIRS

- SW band:



Discussion

-