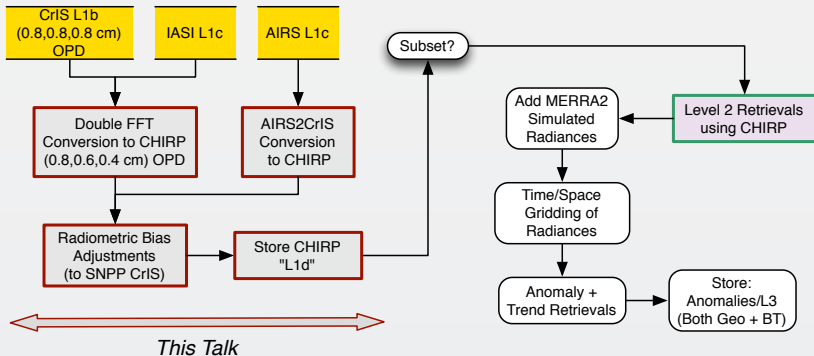


A Long-Term Homogeneous Hyperspectral Radiance Time Series: AIRS2CrIS

L. Larrabee Strow and Howard Motteler (UMBC)

June 20, 2018

Introduction



CHIRP: (Common or Climate) Hyperspectral InfraRed Product

OPD: 0.8 / 0.6 / 0.4 cm

Spectral Spacing: 0.0625 / 0.0833 / 0.1250 cm^{-1}

Why CHIRP

- Convert AIRS, CrIS, IASI to a common spectral response function (SRF)
- Correct for instrumental radiance offsets
- Provides long-term radiance continuity over different instruments
- Allows use of a single forward model (Radiative Transfer Algorithm) for retrievals
- Common SRF for AIRS/CrIS and IASI (1:30 and 9:30 equator crossings)
- Applications
 - Gridded (time/space) radiance products (“L1G”)
 - Geophysical retrievals (anomalies, trends) directly from all-sky radiance anomaly/trends. (See talk by L. Strow)
- OLR trends directly from radiance trend retrievals (See talk by Sergio DeSouza-Machado)
- Use for Level 2 retrievals? Only way to mitigate radiance calibration difference among instruments and to achieve common sensitivity (both for radiances and RTA)

CHIRP Data Flow

