

AIRS v6 Level-1

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Introduction

- AIRS Level-1B products for all instruments will remain at version 5 when Level-2 goes to version 6.
- All level-1B products are operational and high quality.
 - There are known radiometric issues with AIRS at the 200 mK level, but we do not have fixes yet.
 - We have a newer MW tuning from Phil Rosenkranz but the “brightness temperatures” in Level-1B will continue to reflect the old tuning
 - There’s some evidence the old one is better than the new one over ocean
- There will be a Level-1C standalone program provided to interested users.
 - This program will provide ancillary information and optionally a “cleaned up” equivalent of Level-1B.

Level-1C capabilities

Level-1C v6 will be able to:

- Provide modeled dynamic frequencies to allow correction for small spectral shifts/drifts (long-term, orbital, seasonal)
 - Optionally including cross-scan Doppler effect
- Optionally adjust radiances to a fixed frequency set
- Provide an assessment of channel quality
- Optionally “clean” the spectrum by providing replacement values for lower-quality channels

Level-1C packaging

- Level-1C will be distributed for v6 as a standalone compiled program
 - Linux executable
 - Data tables will be compiled in
 - Options via command-line arguments
 - Input: Level-1B file in HDF format
 - Output: a similar Level-1C file in HDF format
 - Some or all radiances optionally modified by cleaning and spectral shifting
 - Added fields will give spectral shift information and specify which Level-1C processing was performed

Level-1C possibilities

- There are Matlab versions of the individual Level-1C components. If resources are available these might be packaged into a parallel Level-1C.
- Some users would also benefit from a callable version of Level-1C so they don't need to have any Level-1C files.
 - Store Level-1B on disk
 - Process to Level-1c in memory before using radiances in analyses.
 - Depending on resources & demand
 - Each supported language has cost.