

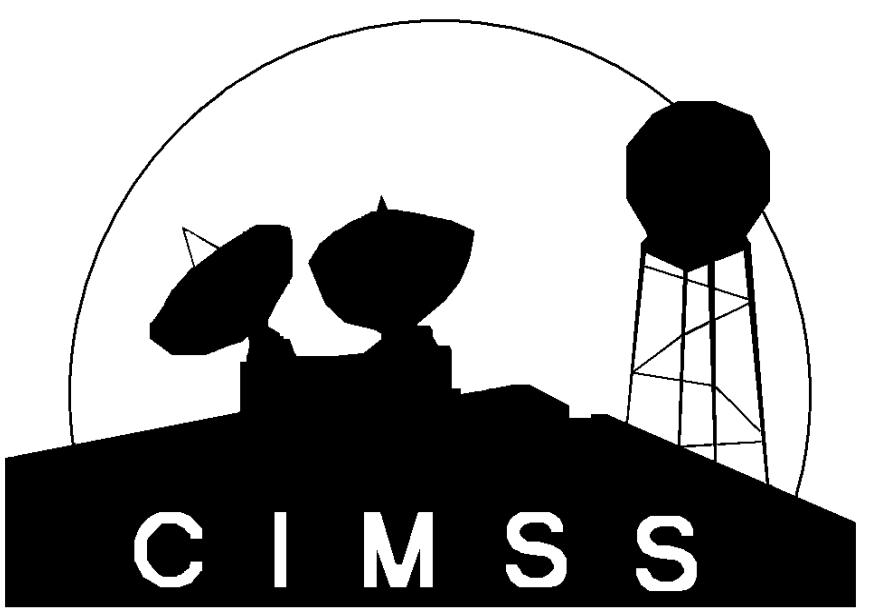


The Cross-track Infrared Sounder (CrIS) on Suomi NPP: Quality Assurance Study

**D. H. DeSlover, D. C. Tobin, H. E. Revercomb,
R. O. Knuteson, J. Taylor and I. A. Borg**

R. S. Ringer, C. Taylor and L. A. Berg

Cooperative Institute for Meteorological Satellite Studies, Space Science and Engineering Center, University of Wisconsin-Madison



Abstract

Post-launch evaluation of the CrIS instrument has led to a number of quality assurance checks to evaluate data quality. Imaginary radiance thresholds applied to the long-, mid- and short-wave channels have been successfully utilized to generate daily quick-looks for each channel. We can independently discern missing spectra from zero-fill radiances, and have noticed a handful of outlier cases that require further investigation.

Our methodology, applied to both direct-broadcast Interface Data Processing Segment (IDPS) and Community Satellite Processing Package (CSPP) output, is presented here. The latter has shown a need to address latency issues in CrIS Raw Data Record (RDR) repair-packet granules. In fact, the vast majority of flagged data are due to missing repair-granules in the aggregated IDPS Science Data Records (SDRs). When a 24-hour latency is applied to the incoming RDRs, and processed through to SDRs via CSPP, the success rate approaches 99.99 percent.

Contact: Dan DeSlover – deslover@ssec.wisc.edu

CrIS Quality Control and File Latency

- ❖ Corrupt spectra are due to data transmission issues (e.g., repair granules, partially full packets). Corrupt spectra include artifacts ranging from a few tenths K to ~100 K.
 - ❖ SCRIS file QC Flags based on packet fill percent and imaginary radiance components now properly flag the corrupt spectra.
 - ❖ The frequency of repair granules has decreased substantially over time.
 - ❖ However, repair granules are not typically issued within 3 hours. Thus, repair granules do not always appear to be incorporated into IDPS/CLASS generated SCRIS files. Subsequently, users need to make use of the QC Flags.
 - ❖ Direct Broadcast data and/or data processed using ADL/CSPP after all repair granules have been received do not have these issues.
 - ❖ These comments/results are relative to how UW gets the CrIS data (via IDPS, CLASS, and SD3E). Characteristics of data distributed to DA centers in near real-time needs further investigation.

