Cross-Track Infrared Sounder (CrIS) Article Published:
CICS Scientist Yong Chen (STAR/SMCD) is the lead author on a new article to be published in the February 2017 issue of *IEEE Transactions on Geoscience and Remote Sensing*. It covers the spectral calibration of the CrIS on the Suomi NPP satellite. It is shown that CrIS metrology laser wavelength varies within 3 ppm, as measured by the Neon calibration subsystem. While the current CrIS operational algorithm is designed to have a spectra error less than 2 ppm, the actual spectral errors are about 4 ppm due to the IDPS (interface data processing segment) software bugs. The article introduces a new correction method that fixes the bugs and further improves calibration. With this new method, CrIS spectral calibration accuracy is now less than 1 ppm.

This figure from the article shows one step in the calibration: the cloud detection algorithm. The left panel shows CrIS observed Brightness Temperature; the middle panel shows the “clear sky” as determined by the CrIS cloud detection algorithm, which is compared with right panel, the cloud fraction measured from a collocated satellite instrument (VIIRS). Chen, Yong, Yong Han, and Fuzhong Weng, 2017: Characterization of long-term stability of Suomi NPP Cross-Track Infrared Sounder spectral calibration,” *IEEE Trans. Geosci. Remote Sens.*, 55, 1147–1159, doi: 10.1109/TGRS.2016.2620438, [http://ieeexplore.ieee.org/document/7738520/](http://ieeexplore.ieee.org/document/7738520/).

**Importance:** CrIS radiance data are directly assimilated into global numerical weather prediction models to improve the medium-range forecasts so accurate calibration is critical. **POC:** Y. Chen
• **Global Space-based Inter-Calibration System featured by UMD:**
   This Monday, January 9th, the University of Maryland posted an article called “From College Park to Earth Orbit: UMD Scientists Improve Quality of Global Weather Satellite Data.” The on-line post features CICS-MD Scientist Manik Bali (STAR/SMCD) and his CICS-MD Task on the Global Space-based Inter-Calibration System.

   The article discusses his presentation at the recent AGU Fall Meeting, coauthored by Ralph Ferraro. Bali is quoted as saying:
   
   “ESSIC’s leadership in supporting these global initiatives is very important,” said Bali.  
   “Looking ahead, I see a far greater interaction between NOAA and ESSIC/CICS, which will help NOAA lead the global satellite calibration efforts.”


   **Importance:** NESDIS’ leadership within GSICS helps promote international collaboration with other operational space agencies. POC: M. Bali

• **CIRA Visiting Scientist Veljko Petkovic Arrives:**
   Veljko Petkovic, a PhD student completing his degree at Colorado State University and doing research with CIRA’s Chris Kummerow, began a one-year visit at CICS-MD this week.

   He will collaborate on satellite precipitation algorithms and product exploitation. A topic of mutual interest between CIRA and CICS is the improvement of convective and stratiform rain separation. He will be working with CICS-MD scientists Nai-Yu Wang, Patrick Meyers and Yalei You on this topic.

   **Importance:** Collaboration amongst NESDIS Cooperative Institutes enhances our ability to perform cutting edge research. POC: R. Ferraro