

# Linking JPSS-1 and SNPP CrIS through Inter-calibration Efforts

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The Cross-track Infrared Sounder (CrIS) is a Fourier transform spectrometer that provides soundings of the atmosphere with 1305 spectral channels, over 3 wavelength ranges: LWIR (9.14 - 15.38  $\mu\text{m}$ ); MWIR (5.71 - 8.26  $\mu\text{m}$ ); and SWIR (3.92 - 4.64  $\mu\text{m}$ ), which was launched on October 2012 on Suomi National Polar-orbiting Partnership (SNPP) satellite and will be launched on Joint Polar Satellite System (JPSS)-1 satellite on November 2017. Give the same spectral range and resolution, the combination of SNPP and JPSS-1 CrIS together will create long-term CrIS hyperspectral spectral infrared measurements, which have potentials for climate monitoring and model assessments. Therefore, the radiometric consistency between SNPP and JPSS-1 CrIS is fundamental to achieve this goal. On the other hand, once JPSS-1 reaches in the final orbit, JPSS-1 will be the same orbit as SNPP except for the  $\frac{1}{2}$  orbit along track separation. In other words, these two satellites will never meet to each other; thus the simultaneous overlapped measurements almost do not exist. In this presentation, we will review the inter-calibration strategy to identify the inter-satellite bias between SNPP and JPSS-1 CrIS, including 1) direct and 2) inter-direct comparison methods. The advantage and disadvantages of each method will be discussed as well as the expected results. In addition, the similarity and difference between SNPP and JPSS-1 CrIS will also be presented based on the pre-launch results.