

Okuyama, A., M. Takahashi, K. Date, K. Hosaka, H. Murata, T. Tabata, and R. Yoshino, 2018: Validation of Himawari-8/AHI radiometric calibration based on two years of in-orbit data. *J. Meteor. Soc. Japan*, **96B**, <https://doi.org/10.2151/jmsj.2018-033>.

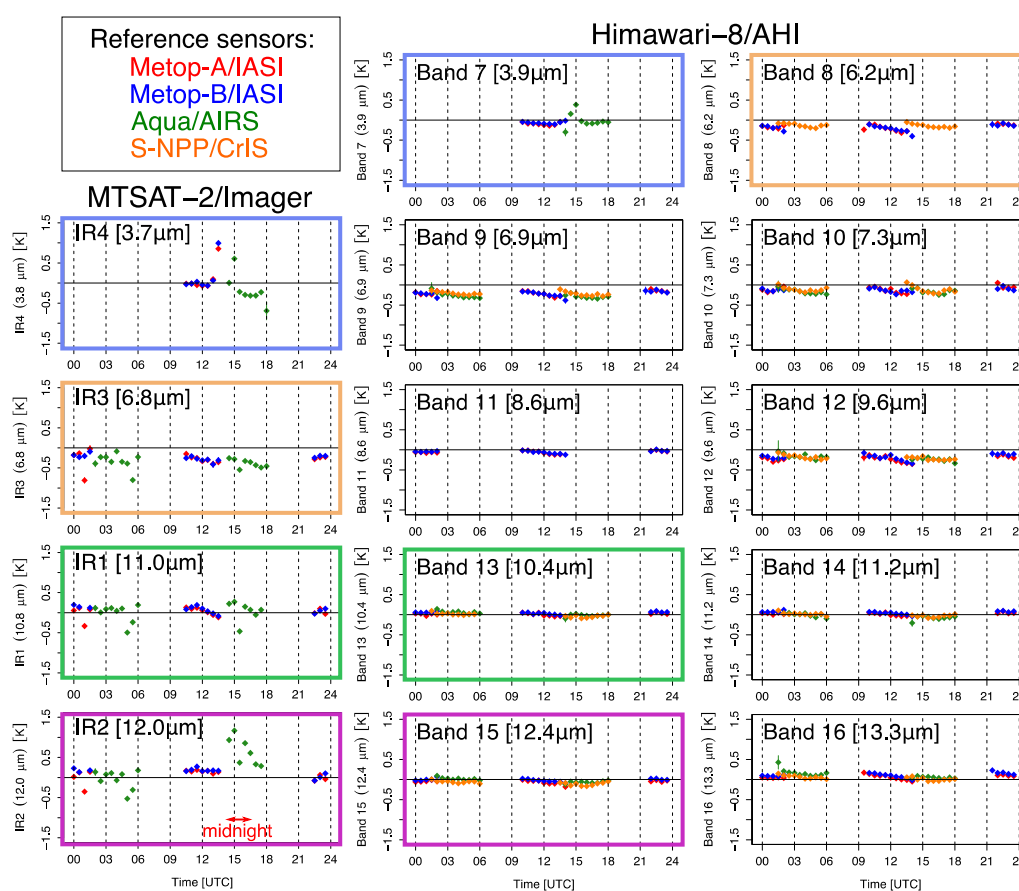


Figure 1. Time dependence of Tb biases at the standard scene between hyper sounders and Himawari-8/AHI (right) and MTSAT-2/IMAGER (left) for February 2016. Colored frames represent corresponding bands which have close characteristics between AHI and IMAGER.

- This paper reports on the radiometric calibration performance of all AHI-8's IR and VNIR bands and introduces an image quality monitoring approach.
- The estimated Tb biases for IR bands are less than 0.3 K in standard scenes (Fig.1). The IR calibration approach developed under Global Space-based Inter-Calibration System (GSICS) framework revealed undesirable diurnal calibration variations in IR data during AHI-8's early commissioning phase.
- VNIR band calibration was validated via ray-matching approach with S-NPP/VIIRS and radiative transfer calculation approach with Aqua/MODIS as a reference. The results indicated that AHI-8 Bands 1 to 4 have no significant biases with reference to VIIRS and MODIS but exhibit trends of sensor sensitivity degradation at approximately 0.5% a year, while Bands 5 and 6 exhibit positive and negative biases of about 5% with no clear degradation. These validation outcomes also show close correspondence with solar calibration target observation analysis results.