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GOSAT thermal infrared data for meteorological use towards GOSAT-2

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The Greenhouse Gases Observing Satellite (GOSAT) is a Japanese mission to monitor greenhouse gases such as CO₂ and CH₄ from space. The GOSAT was launched on 23 January 2009 and obtains normal operation data over 6 years. The FTS covers wide wavelength range from SWIR 3 bands to TIR band from 5.5 to 14.3 microns by simultaneous observations with high spectral resolution.

The TIR band covers not only CO₂ and CH₄ absorption bands, but also skin temperature and water vapor channels. The sea surface temperature is estimated mainly from window channel after correction of water vapor. It is also useful for investigating the sensor stability for long time. Water vapor is an important atmospheric parameter by estimating from TIR band. Water vapor is validated by comparing with ground-based FTS, radiosonde and ground-based GPS receiver.

We will present the GOSAT TIR activity for meteorological use. These efforts will contribute to the next TIR mission such as GOSAT-2.