

## Latest Progress of GOSAT and GOSAT-2 SWIR L2 Algorithms

Yoshida

Yukio

National Institute for Environmental Studies, Tsukuba, Japan

Someya Yu, National Institute for Environmental Studies, Tsukuba, Japan

Ohyama Hirofumi, National Institute for Environmental Studies, Tsukuba, Japan

Kamei Akihide, National Institute for Environmental Studies, Tsukuba, Japan

Morino Isamu, National Institute for Environmental Studies, Tsukuba, Japan

Matsunaga Tsuneo, National Institute for Environmental Studies, Tsukuba, Japan

TCCON partners, <https://tcon-wiki.caltech.edu/>

### Poster

The Greenhouse gases Observing SATellite (GOSAT) has been operating for more than 15 years, and the column-averaged dry air mole fractions of carbon dioxide, methane, and water vapor (XCO<sub>2</sub>, XCH<sub>4</sub>, and XH<sub>2</sub>O; hereinafter called Xgas) have been retrieved globally from the Short-Wavelength InfraRed (SWIR) spectral data (0.76, 1.6, and 2.0 μm bands) observed with Thermal And Near-infrared Sensor for carbon Observation Fourier Transform Spectrometer (TANSO-FTS) onboard GOSAT. Xgas are simultaneously retrieved using a so-called full-physics retrieval method. The retrieval results are released as the FTS SWIR L2 products and available via GOSAT Data Archive Service (GDAS; <https://data2.gosat.nies.go.jp/>). The latest version of the SWIR L2 products are V03.00 (Bias-Uncorrected) and V03.05 (Bias-Corrected).

As a successor to the GOSAT, GOSAT-2 has been operating for more than 5 years. GOSAT-2 is also equipped with two instruments: TANSO-FTS-2 and TANSO-CAI-2. TANSO-FTS-2 has three SWIR bands (0.75–0.77, 1.56–1.69, and 1.92–2.33 μm) and two TIR bands (5.5–8.4 and 8.4–14.3 μm) with a spectral sampling interval of about 0.2 cm<sup>-1</sup>. Since the spectral range of TANSO-FTS-2 is expanded to cover the carbon monoxide (CO) absorption band at 2.3 μm, XCO is also retrieved simultaneously with the other gases in the full-physics retrieval method. In addition to the full-physics-based Xgas products, we also provide proxy-based XCH<sub>4</sub> and XCO products as well as solar induced chlorophyll fluorescence (SIF) product. The latest version of the full-physics product and the proxy-based product are SWFP V02.00 and SWPR V02.00, respectively, and available via GOSAT-2 Product Archive (<https://prdct.gosat-2.nies.go.jp/>).

Some topics about the Xgas validation, bias correction, inter-satellite comparison, and algorithm updates will be shown in the session.

Meeting homepage

[IWGGMS-20 Workshop](#)

[Download to PDF](#)