



## Characteristics of GOSAT Level 2 column concentrations ( $X_{CO_2}$ and $X_{CH_4}$ ) and other data products

Tatsuya Yokota, Nobuhiro Kikuchi, Yukio Yoshida, Andrey Bril, Sergey Oshchepkov, Makoto Inoue, Isamu Morino, Osamu Uchino, Dmitry Belikov, Tazu Saeki, Hiroshi Takagi, Shamil Maksyutov, Akira Yuki, Sayaka Kanekon, Fumie Kawazoe, Masataka Ajiro, and Hiroshi Watanabe

Nat'l Inst. for Environ. Studies (NIES), CGER, Tsukuba, Japan (yoko@nies.go.jp, +81-298-50-2219)

Observational data obtained with two sensors onboard GOSAT, the TANSO Fourier Transform Spectrometer (FTS) and the TANSO Cloud and Aerosol Imager (CAI), have been operationally processed into a suite of GOSAT data products for about four years. Now, nearly all of the GOSAT standard data products, including the Level 4A regional  $CO_2$  flux estimates, are publicly available at the GOSAT User Interface Gateway (URL: <https://data.gosat.nies.go.jp/>).

The TANSO-FTS short-wavelength infrared (SWIR) Level 2 data product, which stores column concentrations of carbon dioxide ( $X_{CO_2}$ ) and methane ( $X_{CH_4}$ ) retrieved from the Level 1B SWIR spectral data, was updated in 2012 (version 02.\*\*). In addition to the TANSO-FTS SWIR Level 2 data product, we now have column concentration data obtained with the PPDF-D retrieval algorithm, as a research outcome. The PPDF-D algorithm is capable of estimating the effects of clouds and aerosols on measurement light path lengths and filtering out the Level 1B SWIR spectra that are contaminated with clouds and aerosols more strictly than the FTS SWIR Level 2 algorithm does, and therefore can selectively yield column concentrations under very clear conditions of the atmosphere. More recently, the PPDF-S algorithm, a method for retrieving  $X_{CO_2}$  and PPDF parameters simultaneously, was developed.

We herein report the latest status of the GOSAT higher level data products and the result of comparing the TANSO-FTS SWIR Level 2 column concentrations with those by the PPDF-D and PPDF-S algorithms.