Geophysical Research Abstracts
Vol. 14, EGU2012-3782, 2012
EGU General Assembly 2012

Preliminary results of the improved GOSAT TANSO-FTS SWIR XCO_2 and XCH_4 retrievals

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Column-averaged dry air mole fractions of carbon dioxide and methane (XCO_2 and XCH_4) are retrieved globally from the Short-Wavelength InfraRed (SWIR) spectral data observed with the Thermal And Near-infrared Sensor for carbon Observation Fourier Transform Spectrometer (TANSO-FTS) onboard Greenhouse gases Observing SATellite (GOSAT). The retrieval results are released as the GOSAT TANSO-FTS SWIR L2 product, and its latest version is V01.xx. This product has biases of -8.85 ppm (-2.3 %) for XCO_2 and -20.4 ppb (-1.2 %) for XCH_4, by comparison with the XCO_2 and XCH_4 obtained by ground-based high-resolution FTS at several Total Carbon Column Observing Network (TCCON) sites. Several causes of these biases are found and the retrieval algorithm has been fixing. Although some bias causes are still remained, the tentative results show small biases (~-3 ppm for XCO_2 and ~-10 ppb for XCH_4). Improvement study has been ongoing, and the latest results will be shown in the presentation.