NIES-GOSAT2-SYS-20251215-024-00

Release Note

GOSAT-2 L4A Global CH_4 Flux Product

Product version 01.01

December 2025

National Institute for Environmental Studies
GOSAT-2 Project

Revision History

Version	Revised	Page	Description
00	Dec. 2025	-	-

1 Introduction

The purpose of this document is to provide considerations for the Greenhouse gases Observing SATellite-2 (hereinafter referred to as “GOSAT-2”) products generated by the National Institute for Environmental Studies, Japan.
The product and its version described in this document are listed in Table 1-1.

Table 1-1 Product and version

Product name	Product version
GOSAT-2 L4A Global CH_4 Flux Product	01.01

2 Difference from previous version

There is no description in this chapter since the product described in this document is the first release.

3 Important information

The important information for this version is shown as follows:

(1) The L2 product version and period corresponding to this version are shown below.
- GOSAT-2 TANSO-FTS-2 SWIR L2 Column-averaged Dry-air Mole Fraction Product: 02.10
- Period: March 2019 to December 2022

Note: All column concentration data stored in the L2 product are used without any bias corrections, except for quality flag screening.

(2) The atmospheric tracer transport model and inverse analysis system used in this version are shown below.
- NICAM-TM (Non-hydrostatic Icosahedral Atmospheric Model-based Transport Model) 4D-Var (four-dimensional variational method) (newly named “NISMON”)

(3) *A priori* fluxes information used in this version is shown below.
- Anthropogenic CH_4 emissions except for rice cultivation (annual); coal mining, oil-gas exploitation and use, landfill and waste, biofuels, and enteric fermentation and manure management: EDGAR (Emissions Database for Global Atmospheric Research); ver. 6.0
- Rice paddy CH_4 flux (monthly): VISIT (Vegetation Integrative Simulator for Trace gases)
- Wetland CH_4 flux (monthly): VISIT
- Soil oxidation CH_4 flux (monthly): VISIT
- Biomass burning CH_4 flux (monthly): GBEI (Global Biomass Burning Emission Inventory; ver. 2022a)
- Natural CH_4 flux (climatology); the sum of ocean, termite, and geological emissions

(4) *A posteriori* fluxes information used in this version is shown below.
- *A posteriori* total surface CH_4 flux (flux_apos_tot) represents the sum of posterior fluxes from anthropogenic emissions, rice paddies, wetlands, soil oxidation, biomass burning, and other natural sources.

(5) The period covered in this version is shown below.
- 42 months from May 2019 to October 2022

4 Version upgrade history

The version upgrade history of the product described in this document is shown in Table 4-1.

Table 4-1 Version upgrade history

Product version	Date	Remarks
01.01	Dec. 2025	Released to General users