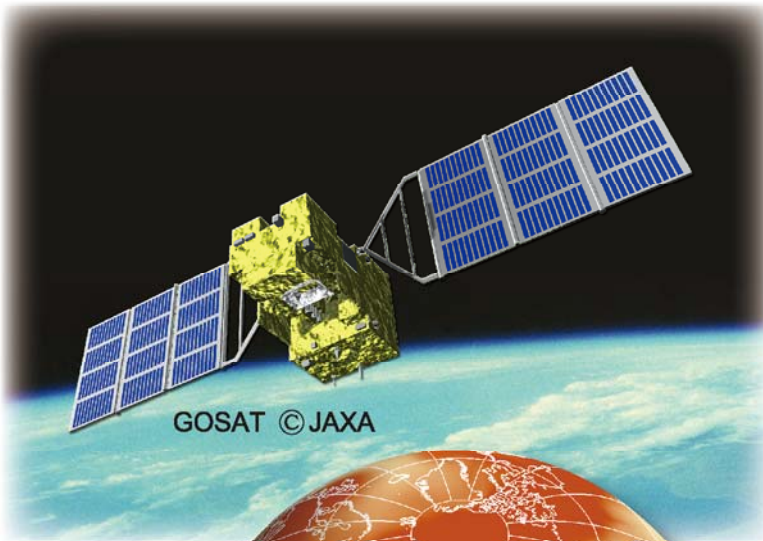




Global GHG Observation from Space

Greenhouse Gas Observation from Space and Use of the Observations to Estimate Global Carbon Flux Distribution



GOSAT © JAXA



March



September

370 372 374 376 378 380 382
(ppm)

NIES atmospheric transport model simulation of monthly surface CO₂ concentrations in 2000.

Global CO₂ Distribution (Monthly Averages)

The Greenhouse Gases Observing Satellite (GOSAT) project is a joint effort of the National Institute for Environmental Studies (NIES), the Ministry of the Environment, and the Japan Aerospace Exploration Agency (JAXA). The satellite is scheduled to be launched in 2008. NIES is developing methods to retrieve carbon dioxide (CO₂) and methane (CH₄) concentrations from GOSAT data, and to estimate the global distribution of carbon flux using inverse modeling. A GOSAT data handling facility (DHF) will be established at NIES for routine data processing and distributing GOSAT data products to users. NIES has done research on the following topics to date.

(1) We developed a technique for handling the effects of thin (cirrus) clouds which are often found in data observed by satellite.

(2) We performed an experiment at the peak of Mt. Tsukuba in December 2006 to simulate satellite observation. We were able to validate the derivation methods for estimating CO₂ and confirm the effects of aerosols on the estimates.

(3) We have made efforts to improve the forward calculation model. Analysis was also done to study the influences of synoptic scale weather change on column-averaged CO₂.

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