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Outline of the data processing of carbon dioxide and methane and the data policy of the Greenhouse gases Observing Satellite (GOSAT)

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GOSAT Project is a joint effort of Ministry of the Environment (MOE), Japan Aerospace Exploration Agency (JAXA), and National Institute for Environmental Studies (NIES), Japan. Data acquired by GOSAT sensors, TANSO-FTS (Fourier Transform Spectrometer) and TANSO-CAI (Cloud and Aerosol Imager), will be transferred to Tsukuba Space Center at JAXA, where Level 1A (L1A) and Level 1B (L1B) data of the FTS (interferogram and spectra, respectively) and Level 1A (L1A) of CAI (uncorrected data) will be generated. Then, Level 1 data will be transferred to GOSAT Data Handling Facility (DHF) at NIES for Level 2 (L2) and further processing. Radiometric and geometric correction will be applied to the CAI L1A data to generate CAI L1B data. From CAI L1B data, cloud coverage and aerosol information (CAI Level 2 data) will be calculated. The FTS data after discriminated as "low cloud coverage" will be processed to retrieve column abundances of carbon dioxide and methane (FTS Level 2 data). Level 3 data will be a global map of column abundances of greenhouse gases averaged in time and space. Level 4A data will be a global distribution of carbon flux estimated by inverse of an atmospheric transport model using the GOSAT L2 data and several ground monitoring station data. The L1 data will be distributed to users after the data calibration. JAXA will calibrate the L1 data and the sensor qualities. The L2 data will be distributed to users after the data validation. MOE and NIES will conduct the data validation. The GOSAT data policy and outline of the GOSAT research announcement will be shown in this presentation.