

## Preliminary results for GOSAT-2 Level 4 global surface fluxes

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The Greenhouse gases Observing SATellite 2 (GOSAT-2) was launched, as the successor of GOSAT, on 29th October 2018 into a sun-synchronous orbit at an altitude of 613 km with 6-day revisit cycle, then the satellite has been operated with normal mode since 1<sup>st</sup> February 2019. GOSAT-2 is designed to measure atmospheric carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and carbon monoxide (CO) with two instruments: The Thermal And Near-infrared Sensor for carbon Observation Fourier Transform Spectrometer 2 (TANSO-FTS-2) and the Cloud and Aerosol Imager 2 (TANSO-CAI-2). The GOSAT-2 mission inherits the main objective of the GOSAT that improves our knowledge of spatiotemporal variations of CO<sub>2</sub> and CH<sub>4</sub> in the atmosphere and the process governing their exchange between the atmosphere and the Earth's surface and contributes climate change studies and related environmental policy making. The GOSAT-2 project provides Level 1 radiance spectral products of GOSAT-2 observations for general users and released FTS-2 shortwave infrared (SWIR) Level 2 atmospheric concentration products to the GOSAT series' Research Announcement users. The GOSAT-2 Level 4 products will provide estimates of global surface fluxes on CO<sub>2</sub> and CH<sub>4</sub> based on the FTS-2 SWIR Level 2 products and surface observations. This presentation will introduce detailed features for the GOSTA-2 Level 4 product including the prior information and preliminary results on multi-year global CO<sub>2</sub> flux estimates using GOSAT FTS SWIR Level 2 products, and additional information about the latest GOSAT-2 products.

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