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Poster
Following the launch of the Japanese satellite, the Greenhouse Gases Observation SATellite (GOSAT), satellite observations have become widely recognized as effective tools for applications such as monitoring greenhouse gases (GHG) monitoring and the study of the carbon cycle. GOSAT-2, its successor, was launched in 2018 and is still in operation. The Global Observing SATellite for Greenhouse gases and Water cycle (GOSAT-GW) is scheduled for launch in 2024, with a planned lifetime of seven years. We aim to define the satellite and sensor specification requirements of the future GHG monitoring satellite mission, which is expected to be the fourth generation of the GOSAT series and is expected to be operational in the 2030s at the end of FY2025, taking into account the scientific, political, and commercial use. Over the past year, we have been discussing the mission objectives and targets based on the scientific requirements through discussions at the National Institute for Environmental Studies, consultations with an advisory council, and information gathering at related conferences and meetings. These discussions led us to define the mission objective as "to improve the accuracy of global GHG flux estimates and ensure the continued provision of long-term GHG concentration data". From this objective, we identified three specific targets:
? Reducing biases in the Level 2 data to improve global flux inversion estimates.
? Increasing the amount of Level 2 data in the tropics to improve global and low-latitude flux estimates.
? Ensuring the continued provision of satellite-derived GHG data from the GOSAT series.
We have proposed three concepts for global satellite observations from the polar orbit to achieve these targets.
A) A constellation of imaging spectrometers with optical specifications similar to GOSAT, including an additional band at 1.27 ?m.
B) Combination of imaging spectrometer with aerosol lidar.
C) Combination of imaging spectrometer with GHG lidar.
This year, we plan to assess the impact of the L2 data quality on the L4 data. In parallel, we will merge the political and commercial requirements with the above concepts to define satellite and sensor specifications.
Meeting homepage
IWGGMS-20 Workshop
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