

IAF EARTH OBSERVATION SYMPOSIUM (B1)
International Cooperation in Earth Observation Missions (1)

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SATELLITES CONTRIBUTION TO THE PARIS AGREEMENT - WORLDWIDE ENGAGEMENT
FOR GREENHOUSE GASES EMISSION MONITORING FROM SPACE -**Abstract**

This session focuses on activities of Japan Aerospace Exploration Agency (JAXA) to foster worldwide engagement for contributing to the Paris Agreement by monitoring of global greenhouse gases from space.

“The Paris Agreement’s aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Under this agreement, the rules are being discussed to ensure transparency of activities.” (ref. UNFCCC website)

Nations are required to report their inventories of greenhouse gases. Intergovernmental Panel on Climate Change (IPCC) developed a guidance to assist countries in compiling complete, national inventories of greenhouse gases. The guideline is now being refined and to be adopted in IPCC plenary in 2019.

JAXA, in collaboration with the Ministry of the Environment – Japan (MOE) and the National Institute for Environmental Studies (NIES), launched Greenhouse gases Observing SATellite “IBUKI” (GOSAT) in 2009, which is the world’s first satellite dedicated to measuring greenhouse gases. GOSAT allows to monitor atmospheric carbon dioxide and methane all over the world by 13,000 points, while there had been only 270 ground-based measurement points used before GOSAT launch.

GOSAT made significant and remarkable scientific and technology advancement on monitoring global GHG by its nine years operation. The next challenge would be on how the GOSAT achievements could inform to decision making process particularly on how to support accuracy of national GHG report by using GOSAT data and information. To realize the challenge, Japan is leading comprehensive efforts throughout engaging technical, scientific and political stakeholders towards the inclusion of space-based GHG monitoring in the IPCC refined Guidelines.

It is also essential to facilitate international cooperation among space agencies for sustaining future space-based GHG monitoring systems. Following to GOSAT, NASA launched OCO-2 in 2014, China launched TanSat in 2016 and more GHG measurement satellites will launch afterwards. JAXA and NIES are leading to enhance the reliability of space-based GHG data through agreement with NASA, ESA, CNES and DLR for exchanging and calibrating/validating both GHG datasets.

In this session, JAXA discuss about its engagement activities as well as results by GOSAT and future cooperation for further utilization of space-based GHG data.