Keynote

Wed. Nov 11, 2026 2:00 PM - 3:30 PM JST | Wed. Nov 11, 2026 5:00 AM - 6:30 AM UTC | Room B (Kujaku) (2F)

Keynotes B1

Chair: Joanna Staneva, Yoichi Ishikawa

2:45 PM - 3:05 PM JST | 5:45 AM - 6:05 AM UTC

[p9SreT9v-04] Thirty Years of JAXA Earth Observation: From Monitoring to Prediction Toward Earth Intelligence

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JAXA has a longstanding history of developing and operating Earth observation satellites. Since the 1990s, it has continuously advanced a diverse portfolio of observation systems spanning multiple sensing technologies. Many of these missions have now evolved into their second and third generations, enabling the establishment of nearly three decades of continuous global Earth observation records. These long-term datasets provide an invaluable foundation not only for scientific research but also for practical applications, including disaster management, environmental monitoring, land and ocean observation, and the provision of greenhouse gas information to policymakers.

Currently, JAXA operates nine Earth observation satellites and sensors and provides a wide range of science-based data products to users worldwide. Since 2024, three new Earth observation missions have been successfully launched. EarthCARE, carrying the Cloud Profiling Radar (CPR), was launched in May 2024. ALOS-4, equipped with the Phased Array L-band Synthetic Aperture Radar-3 (PALSAR-3), was launched in July 2024. GOSAT-GW, carrying the TANSO-3 greenhouse gas monitoring sensor and the Advanced Microwave Scanning Radiometer-3 (AMSR3), was launched in June 2025. In addition, JAXA is developing two next-generation missions: the Precipitation Measuring Mission (PMM), featuring a Ku-band Doppler precipitation radar, and the Multi-footprint Observation Lidar and Imager (MOLI), which will be deployed on the International Space Station. Through these efforts, JAXA continues to advance satellite technologies, sensors, and data products to address global challenges such as climate change, extreme weather, and natural disasters.

Looking ahead, the value of more than 30 years of continuous Earth observation data extends beyond monitoring toward prediction and actionable intelligence. By integrating long-term satellite observations with Earth system models, data assimilation frameworks, and emerging artificial intelligence technologies, JAXA is working to enhance climate and environmental forecasting capabilities. This transition from observation to prediction represents a key step toward realizing “Earth Intelligence,” delivering greater benefits to science, policy, and society through improved understanding and anticipation of our changing planet.

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