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Poster
The third satellite in the GOSAT series, the Global Observing SATellite for Greenhouse gases and Water Cycle (GOSAT-GW), is being prepared for launch in 2024. Development of ground systems for the Total Anthropogenic and Natural emissions mapping SpectrOmeter-3 (TANSO-3) is progressing. NIES receives spectrum data from JAXA, creates Level 2 products, and distributes them to users by operating the systems. Comprehensive tests are currently being conducted in preparation for the regular operation of the systems after the satellite's launch. The core system, GOSAT 3rd generation Data Processing/operating System (G3DPS), has been developed as a cloud-like on-premises machine equipped with virtualization infrastructure and object storage, with consideration for high availability and long-term data storage. The systems for retrieval processing are constructed independently. Level 2 products (NO2) are generated by the GOSAT-GW NO2 Data Processing System (GNDPS). The processing for level 2 products (GHG) is conducted on the GOSAT operational and research Computing Facility (GOCF), a general-purpose supercomputer. The most critical issue in TANSO-3 data processing is the exploded computational workload. TANSO-3 is a different type of sensor from the previous two GOSAT satellites (changed from FTS to grating). The number of points for retrieval will increase by more than 300 times. We are tackling software optimization from a computational science perspective. We also attempt to speed up the processing by emulating retrieval using machine learning techniques. TANSO-3 products will be available to general users through the GOSAT-GW TANSO-3 Product Archive (G3PA) website.
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