Data, Observation & Modelling

Fri. Nov 13, 2026 9:00 AM - 10:30 AM JST | Fri. Nov 13, 2026 12:00 AM - 1:30 AM UTC | Room A (Oshidori) (2F)

Oral A4 Ocean Observing Systems and Data Quality

Chair: Sigmund Kluckner, Takeshi Doi

10:00 AM - 10:15 AM JST | 1:00 AM - 1:15 AM UTC

[MBtCkkTq-05] Globally covered Argo float observations and a challenge of quality control with the signature method for improved RTQC profiles

*Shigeki Hosoda (1. JAMSTEC, WPI-AIMEC (Japan))

The Argo data—comprising global temperature and salinity profiles collected with uniform quality control—have been accumulating for over 25 years, and by 2025, the cumulative number of so-called “Core mission” profiles exceeded 3 million. The Argo data flow, which forms the backbone of the Argo program, is already well-established in collaboration with highly accurate data from ship observations and others; Data Assembly Centers (DACs) in various countries and float PIs conduct real-time (RTQC) and delayed-mode quality control (DMQC), respectively, performing both automatic and accurate quality checks before submitting data to the Argo Global Data Assembly Centers (GDAC). Because the Core mission profiles provide comprehensive global coverage, they enable the capture of seasonal variations on an ocean basin scale and the forecast data using data assimilation models, leading to a wide range of scientific outcomes and applications across various fields. The volume and scale of this accumulated Argo data are substantial for ocean observations, and it is becoming increasingly difficult for resources to provide quality-controlled data that meets the Argo data flow requirements within the specified timeframe. Furthermore, the RTQC data produced by automated processing—which is provided for forecasts requiring immediacy—is not being maintained at a sufficient research level. To address these points, attempts were made to create an available dataset bringing better quality-controlled RTQC data before submitting DMQC data, based on a method that defines profile data as a single function called a “signature” and determines the errors based on its features (Sugiura and Hosoda, 2022), as well as on a further development of this method (Kouketsu et al., 2026). Currently, the transition from the conventional Argo to the OneArgo—which includes BGC and Deep missions—is underway; applying this method to each parameter is effective, and further automation utilizing AI and ML is anticipated.

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