

# Chinese Argo National Data Management Report

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## 1. Real Time Status

- **Data acquired from floats**

From last October, China acquired 3,484 core profiles (additionally 931 DOXY, 591 CHLA, 1025 BBP, 157 CDOM, 789 DOWN\_IRRADIANCE, 334 NITRATE and 297 pH) from 79 operational floats including 51 PROVOR, 6 HM2000, 2 ARVOR\_D, 2 NAVIS\_BGCi, 1 HM4000 and 15 XUANWU floats (Fig.1). All these data were received and processed at CSIO DAC.

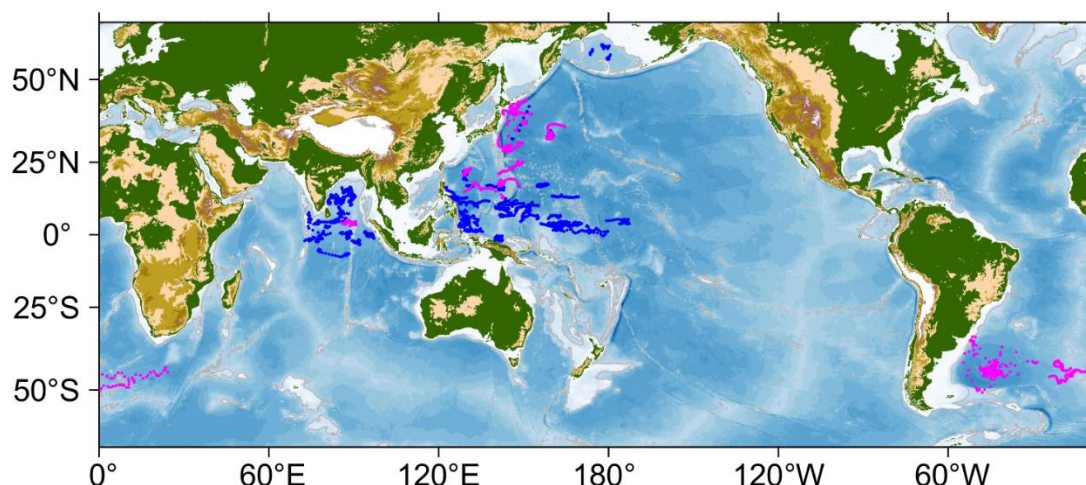


Fig.1 The geographic distributions of Core (blue) and BGC (pink) profiles since last October

- **Data issued to GTS**

All core profiles and DOXY profiles processed by CSIO are distributed on the GTS by China Meteorological Administration (CMA). The profiles are sent as BUFR bulletin. Most data are inserted on the GTS within 6 hours.

- **Data issued to GDACs after real-time QC**

Meta-data, technical, trajectory and profile files are delivered to Coriolis GDAC on an operational basis. CSIO also routinely checks feedbacks from Coriolis data center and reflags the doubtful data.

- **Delayed mode data sent to GDACs**

The total number of the D-files submitted to GDACs is about 6952, some of them belong to secondary quality control. In general, about 80% of the core profiles have been DMQC'd.

Since last ADMT meeting, NMDIS has corrected and uploaded some previously missed data to GDAC.

## **2. Delayed Mode QC status**

Currently, Mrs. Xiaofen WU continue to be responsible for DMQC of Argo data at CSIO. With the help from the CSIRO DMQC team, CSIO updated the DMQC system this year to process RBR CTD data.

For deep Argo floats, we used full-depth shipboard CTD cast at float deployment to obtain CPcor\_new and then corrected salinity profiles in DMQC.

NMDIS adopted the OWC3.0 method and developed an enhanced version of the background dataset specifically for the Pacific region based on the publicly available 2023 background dataset from ADMT. The corrected results were confirmed and evaluated using spatiotemporal proximity data, demonstrating the ability to correct Argo buoy temperature and salinity profiles.

## **3. Value Added items**

### **3.1 List of current national Argo web pages, especially data specific ones**

China Argo Real-time Data Center (CSIO) <http://www.argo.org.cn>

Deep-Argo web application: <http://deep.argo.org.cn>

China Argo Data Center (NMDIS): <https://www.argo-cndc.org>

### **3.2 Statistics of National Argo data usage**

**Operational uses:** Argo data have been used in most ocean data assimilation systems operated by department or institutions such as NMEFC, NMDIS, IAP, Laoshan Lab, etc.

**Scientific applications:** Argo data are mainly used in scientific studies from seasonal to decadal ocean variations in global and regional scales, air-sea interactions, ocean's role in global climate change.

**National PIs:** About 22 PIs from 11 agencies have deployed profiling floats and agreed to join China Argo.

### **3.3 Products generated from Argo data that can be shared**

**BOA\_Argo:** It is a biannually updated gridded Argo product developed by CSIO ([ftp://data.argo.org.cn/pub/ARGO/BOA\\_Argo/](ftp://data.argo.org.cn/pub/ARGO/BOA_Argo/)). The product is based on the post-QC'd Argo dataset maintained by CSIO.

**GDCSM\_Argo:** It is a gridded Argo product jointly developed by SHOU (Shanghai Ocean University) and CSIO based on the Gradient-dependent Correlation Scale Method (<ftp://data.argo.org.cn/pub/ARGO/GDCSM/>).

**IAP data set:** The IAP data set is a global ocean gridded data set developed by Lijing Cheng from IAP (Institute of Atmospheric and Physics, Chinese Academy of Sciences). Besides Argo core profiles, other available profiles from various instruments (e.g. XBT, MBT and shipboard CTD, etc.) are also used. (<http://www.ocean.iap.ac.cn/>). The gridded data set includes temperature, salinity, stratification, heat content, steric sea level and oxygen.

**CSIO Argo trajectory data set:** This Argo trajectory data set provides the QC'd satellite fixes and underwater velocities for all floats and annual mean mid-depth velocity field at 1000 m. The extrapolated fixes for the floats using Argos satellite system are calculated with Park's method.

**NMDIS T&S integrated dataset:** NMDIS standardizes, quality controls, and removes duplicates of internationally shared temperature and salinity data such as Argo, GTSP, WOD and produces a global temperature and salinity integrated data set. The dataset is newly published via China Ocean Cloud, <https://OceanCloud.nmdis.org.cn>.

## **4. GDAC Functions**

None.

## **5. Regional Centre Functions**

None.

## **6. Other Issues**

Total 495 shipboard CTD casts have been submitted to Coriolis for Argo DMQC (482 from NMDIS, 13 from CSIO).