Chinese National Report

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1. The status of implementation (major achievements and problems in 2011)
   ## - floats deployed and their performance

In 2011 China deployed 41 floats in the northwestern Pacific Ocean and Indian Ocean, in which 40 floats were deployed by the Second Institute of Oceanography, SOA and the rest 1 float by the East China Sea Branch, SOA. Of these floats, 10 were iridium APEX floats, 10 were ARVOR, one was PROVOR and the remaining 20 were standard APEX floats. As for the performance of those floats deployed in 2011, two ARVOR floats failed to work or transmit data after deployment, and one APEX float reported bad salinity data. Most of the APEX floats were installed lithium battery packs at CSIO, and so far no floats failed to work due to energy fault.
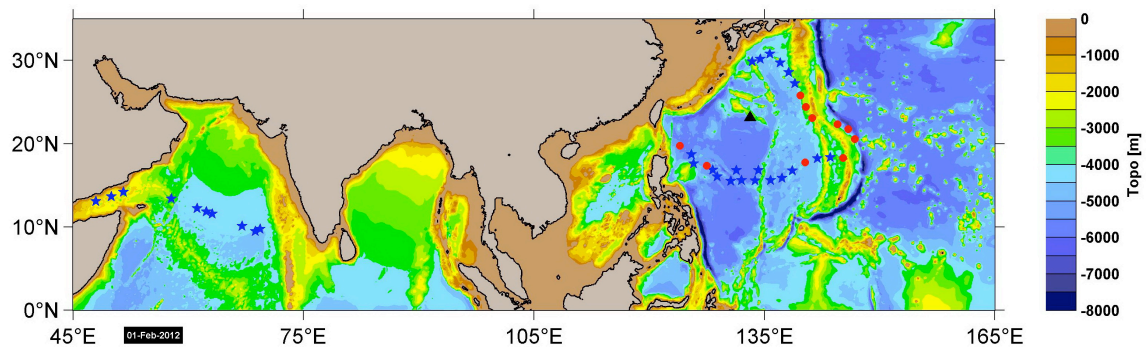

Fig.1   Launch positions of Chinese Argo floats in 2011.

Red dots are ARVOR floats, blue pentagrams are APEX floats and the black triangle is

Until now, China has deployed totally 131 Argo floats, and 85 are still active by the end of 2011, in which 4 APEX floats are equipped with Aanderaa Optode. You can see from Figure 2, about 45% floats could make 40 cycles, which is less than that of 2010 because nearly half of the floats were deployed in 2011.
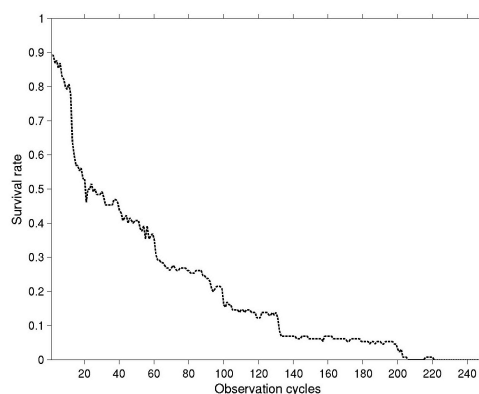

Fig.2   Survival rate estimated for all Chinese Argo floats by the end of 2011.

- technical problems encountered and solved

Two APF9a floats equipped with SBE41 (WMO: 2901179, 2901512) deployed by CSIO reports bad salinity measurements since their first profiles. Float 2901179 was deployed in the northwestern Pacific Ocean, and its salinity measurements were always zeros. Float 2901512 was deployed in the north Indian Ocean, and its salinities were around 12.5. The reason is still unknown.

- status of contributions to Argo data management (including status of pressure corrections, technical files, etc)

In 2011, we obtained 1879 TS profiles (a few oxygen profiles) from 85 active floats, and submitted these profiles to GDAC after RTQC. Coriolis DAC has helped us to decode Argos messages from 10 ARVOR floats and put R-files into 'csio' directory at GDAC ftp site since Sep., 2011. All profiles were put on GTS by CLS.

- status of delayed mode quality control process

In July of 2011, CSIO started to implement surface pressure correction in DMQC. After surface pressure corrections, CTM corrections and OW were applied. 27 TNPD APEX floats were found, and their <PARAM>_ADJUSTED_QC, <PARAM>_ADJUSTED _ ERROR were corrected in the new created D-files. One difficulty during DMQC is lack of historical CTD data in marginal seas where some floats drifted into. The large variability of salinity in Kuroshio is another difficulty we encountered.

2. Present level of and future prospects for national funding for Argo including a summary of the level of human resources devoted to Argo.

As usual, China Argo is mainly funded by research programs rather than operational budget. So it's difficult to estimate the number of floats to be deployed in the following years. We estimate the number of float deployment in 2012 would be about 30. At CSIO, there is a group (about 5 persons) in charge of float deployment, Argo data processing (RT/DMQC) and production of Argo related products.

3. Summary of deployment plans (level of commitment, areas of float Deployment, low or high resolution profiles) and other commitments to Argo (data management) for the upcoming year and beyond where possible.

In 2012 we are going to have two cruises for float deployment, one will be conducted by VOS and the other will be a special cruise for Argo deployment. The date of latter will be determined when the funds for a new granted program is allocated. This new granted program will deploy totally 35 Argo floats in the coming 5 years. The VOS cruise will deploy 10 floats probably during June-August. Most of the floats to be deployed this year will be in the North Pacific Ocean.

4. Summary of national research and operational uses of Argo data as well as contributions to Argo Regional Centers.   Please also include any links to national program Argo web pages to update links on the AST and AIC websites.

Argo data has been widely used in operational models, ocean data assimilation in China. NMDIS

produced a 23-year regional reanalysis product (CORA) of temperature, salinity and currents for

the China coastal waters and adjacent seas using SSHA and various temperature and salinity profiles including Argo data. Argo data has been used in an ocean reanalysis system for the joining area of Asia and Indian-Pacific Ocean at the Institute of Atmospheric Physics, Chinese Academy of Sciences. Additionally, some Argo gridded temperature and salinity fields of global oceans or Pacific Ocean have been produced which can be accessed at China Argo Real-time Data Center's website (http://www.argo.org.cn). The progress of China Argo project is also updated through China Argo Real-time Data Center's website both in Chinese and English.

5. To continue improving the number of CTD cruise data being added to the reference database by Argo PIs, it is requested that you include the number and location of CTD cruise data uploaded by PIs within your country to the CCHDO website in the past year.

In the past year, we had three cruises for Argo deployments. However, those cruises were implemented by VOS ships, and no CTD casts were made either because there was no CTD installed or there was CTD instrument but the sea condition was not allowed to operate the CTD. China Argo is fully aware of the importance of shipboard CTD samples for improving the quality of Argo data, and striving for supports from national special funding, with which a special cruise using RV will be arranged every two years and multi-stations shipboard CTD samples will be collected for comparing with Argo data. Besides, methods for improving Argo data quality will be explored so as to provide high quality and accurate Argo data for users, and submit CTD samples to CCHDO database.

6. Keeping the Argo bibliography

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