

Korean National Report on Argo-2007

Deployment in 2007 and Future Prospect

National Institute of Meteorological Research of Korea Meteorological Administration (METRI/KMA) and Korea Ocean Research and Development Institute (KORDI) are involved in International Argo Program. In 2007, KORDI deployed 9 floats in East/Japan Sea. Since 1998, Korea Argo has kept its steady course, deploying 193 floats until 2007. At present, 96 floats are active.

In 2008 total of 29 floats are planned for the deployment; 16 floats in the East/Japan Sea , 10 floats in the Pacific Ocean, and 3 floats in the Drake Passage. In addition, KMA/METRI is going to purchase 15 floats for the deployment in 2009 during this year. It is expected that METRI is able to secure funding to maintain the current level of float launch for the next several years.

Status of Argo data management

METRI's RTQC Argo data with TESAC and NetCDF format are transmitted into GTS network and GDAC respectively. In 2007, however, there was a problem in transmitting into GTS during several months due to the change on KMA's system. Currently the problem was solved. Submission of KORDI's RTQC Argo data to GDAC is now normally working with NetCDF format since February 2008. We had noticed that there was no separate directory for KORDI in the outgoing section of GDAC.

Korea Oceanographic Data Center (KODC) is in charge of delayed mode QC (DMQC) and has worked on the DMQC for Korean Argo data in the North Pacific, the East/Japan Sea and the Antarctic Ocean. As of December 2007, KODC sent 1493 delayed mode profiles, 50% of total 3011 profiles in the North Pacific, to the GDACs. KODC also made a reference database for the East/Japan Sea which is a marginal sea in the Northwest Pacific. It was named as ESHB (East Sea HydroBase). Delayed mode file in the East/Japan

Sea is going to be submitted to GDACs. In relation to DMQC in the Antarctic Ocean, KODC asked ADMT group for assistance.

In 2007 METRI upgraded Argo web site (<http://argo.metri.re.kr>) for the distribution of DMQC data, but the data are limited to Korean floats in the North western Pacific. METRI has a plan of additional upgrade for DMQC DB in 2008.

Research and operational uses of Argo data

METRI has a long-term plan to develop the operational ocean forecasting system around the Korean Peninsula as well as the global ocean. For the purpose, METRI has been developing the (Argo) data assimilation for their model system. Also, KORDI uses Argo data for scientific research and a data assimilating-model to understand circulation in East/Japan Sea. In addition, researches on the variability of heat content in the mixed layer, data assimilation and other application for ocean modeling are actively carried out by several universities in Korea.

Real time ARGO observations are being used in KOPS model for the East Sea region. Following figure (Fig.1) shows the current location of the each ARGO float deployed in the East Sea (only live floats are shown in the figure). Profiles are being updated every 2 days and used for data assimilation purpose. For any given day of model run, observations available in recent 10 days prior to the model date are used.

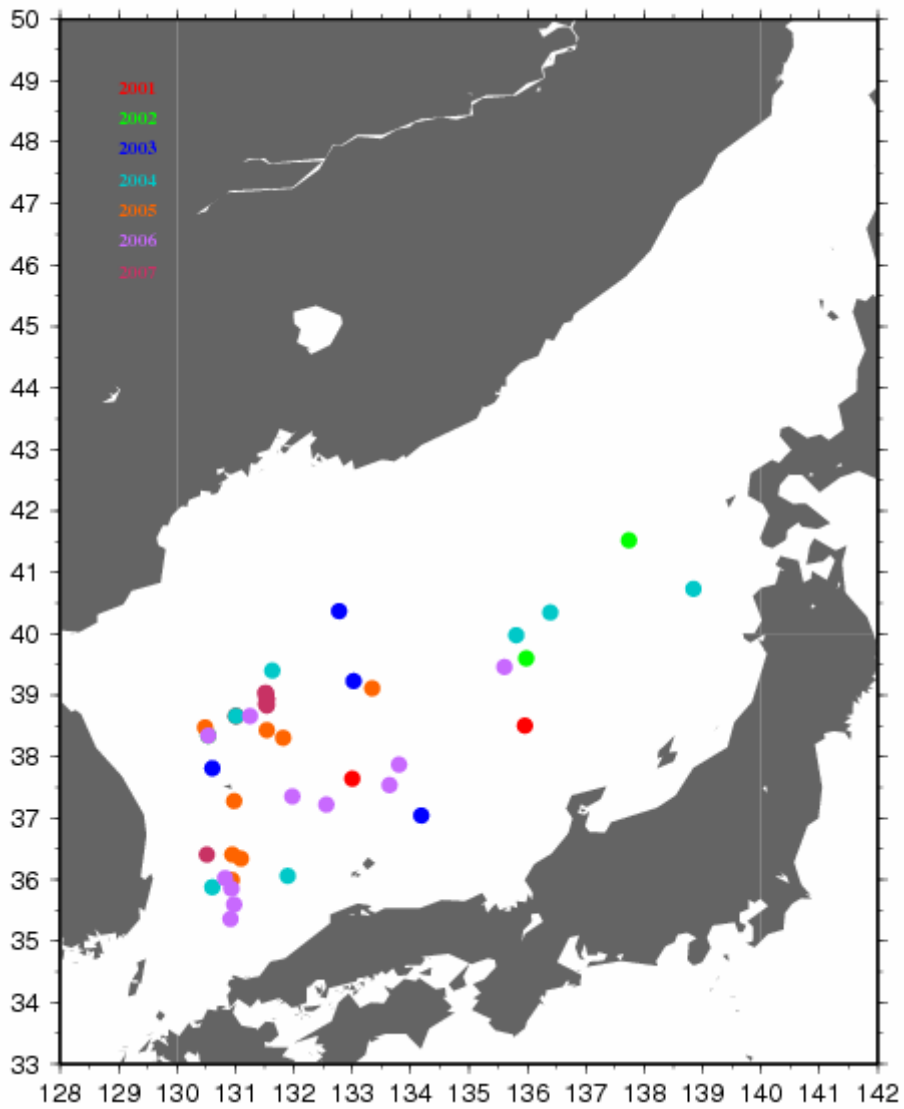


Fig.1: Current locations of ARGO floats in the East Sea

Some observations have errors and some have missing values for some depths in between, these observations are removed from the data assimilation by using quality control checks.

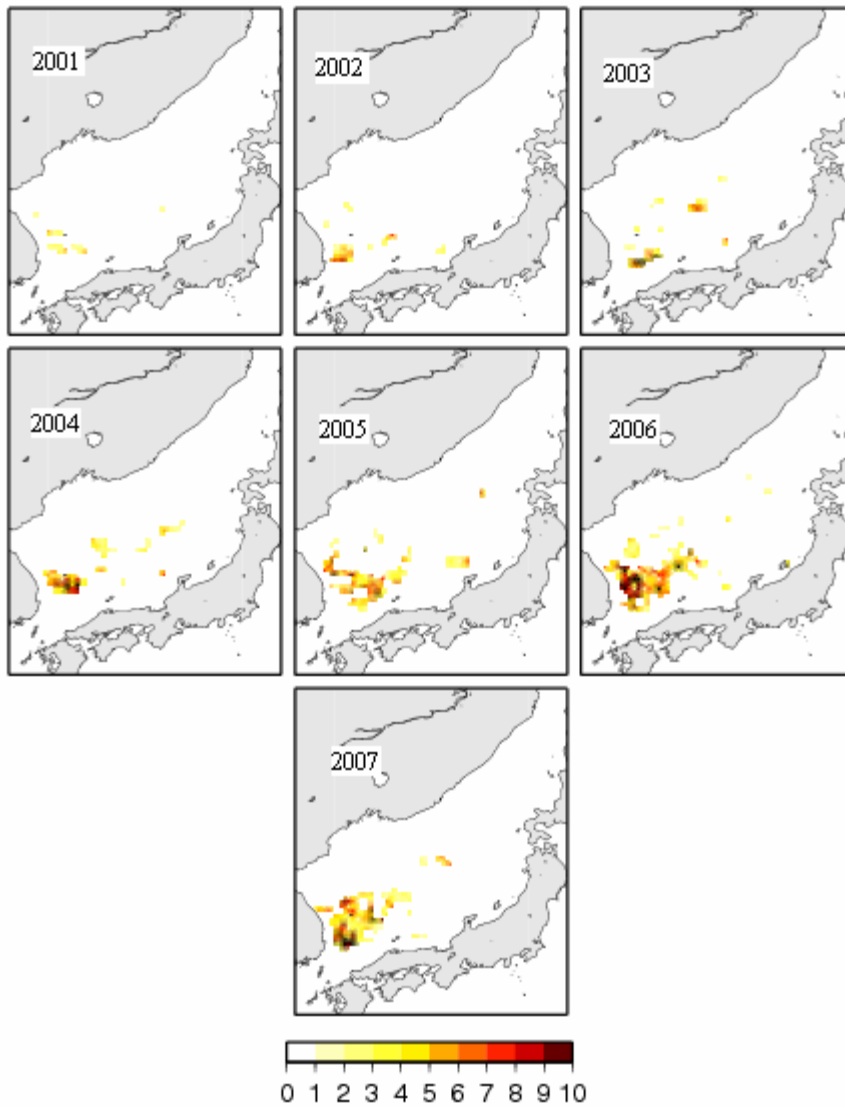


Fig. 2: No. of observations per grid (.25 X 0.25) in the East Sea are shown for each year from 2001 to 2007.

The distribution of ARGO observations were very sparse during 2001 (since this is the beginning of the program) and increased year by year. The available observations are shown per each 0.25 X 0.25 Deg. grids are shown in the above figure (Fig. 2). The ARGO observations are relatively dense in the southwestern part of the East and very few observations are available in the northern part of the East Sea.