Argo-KOREA Annual Report 2019

by the National Institute of Meteorological Sciences/KMA

1. Status of Implementation

The National Institute of Meteorological Sciences of Korea Meteorological Administration (NIMS/KMA) has deployed 247 Argo floats around the Korean peninsula and the North Pacific Ocean since 2001, including 31 active floats as of March 2020. In 2019, NIMS/KMA deployed 6 Argo floats in the East Sea and the Yellow Sea by using the KMA research vessel, Gisang 1(Fig.1). Four floats were deployed in the East Sea on October 24, 2019 with 800m of parking depth and seven-day profiling scheme, and two floats in the Yellow Sea on November 8~9, 2019, for the shallow sea observation with two-day profiling scheme and 60m of parking depth. Of these floats deployed in 2019, three floats in the East Sea and one float in the Yellow Sea have so far performed well.

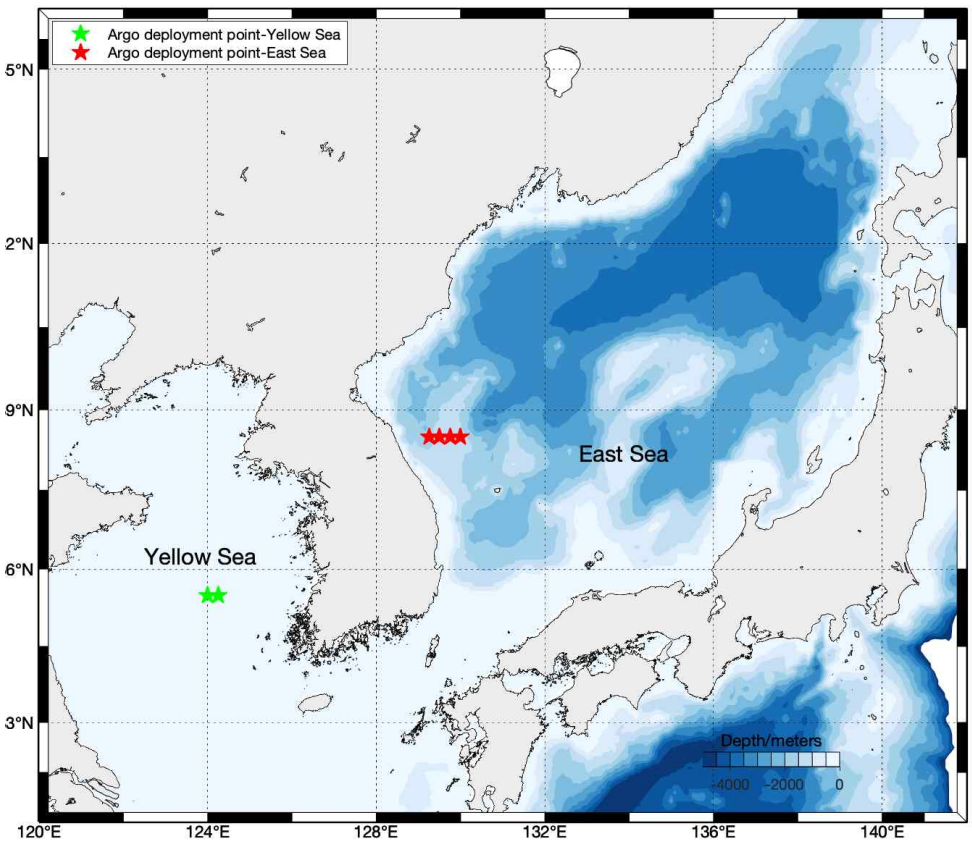

Fig. 1. Initial position of Argo floats deployed by the NIMS/KMA in 2019

- Status of contributions to Argo data management

・Development of quality control program for the regional sea (East Sea).
  - Spike test range of temperature (0~400m: 0.3℃ / 400m~: 0.05℃) and salinity (0~400m: 0.08psu / 400m~: 0.01psu)
  - Gradient test range of temperature (Surface temp. inversion) and salinity (0~500m: 2psu / 500m~: 0.02psu)
  - Density inversion test range (0~300m: 0.03 / 300m~: 0.005)

・CTD sensor serial number has been checked, as a result total 10 floats deployed (sensor error issue)

- Delayed Mode QC

・We are currently processing new R-files that have been collected since 2013 in the East Sea and Western North Pacific. Those **10,125 files**(8,816 files from the East Sea and 1,309 files from the Western North Pacific) will be revised to D-files with NetCDF format(ver. 3.1) and will be sent to the GDACs by the end of this October, or at the earliest when the surface pressure issue is resolved. It has been identified that the surface pressure values in tech.nc files are missing, and we are trouble shooting the cause of these missing values for accurate DMQC process.

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

NIMS/KMA purchased and successfully deployed the 6 ARGO floats around Korean peninsula (East and Yellow Seas) in 2019. In 2020, we plan to purchase and deploy 6 ARGO floats as well as in 2019.

・Following persons contribute to the Argo-Korea program:
  - KiRyong KANG, Sang Myeong OH, Hyeong-Jun JO (NIMS/KMA)
  - Sung-Dae KIM, Hyuk-Min PARK (KIOST)
  - Jong-Jin PARK (Kyungpook National University)

3. Summary of deployment plans

NIMS/KMA has a deployment plan for 6 ARGO floats in 2020: four floats will be deployed at the East Sea to keep the observation network and two at the Yellow Sea to continue the shallow sea observation scheme in the regional ocean. Continuing the observation in the Yellow Sea, observation program using the Argo float will be preformed to investigate the ocean environment variation in west sea of Korea.

4. Summary of National Research and Operational Uses of Argo data as well as contributions to Argo Regional Centers.

The ARGO observation data deployed by NIMS/KMA are used in the Global Ocean Data Assimilation System (GODAPS). The initial input field with improved accuracy through the GODAPS is used for the KMA climate forecasting system. The ARGO observation data are also used to verify the prediction results of KMA climate forecasting system.

In 2019, the ARGO float QC methods in real and delay mode was improved to reflect the ocean characteristics of the East Sea and the Yellow Sea. As a results, a number of observed profiles that could not be used previously can be used.

The NIMS/KMA runs a Regional Data Assembly Center (RDAC) in order to provide the ARGO profile data which can be found at the home page: http://argo.nims.go.kr.

5. Issues that your country wishes to be considered (and resolved) by AST regarding the international operation of Argo.

- Regional ocean observation using the Argo floats.

6. CTD data uploaded to CCHDO

- No

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