EURO-ARGO

EUROPEAN RESEARCH INFRASTRUCTURE CONSORTIUM FOR OBSERVING THE OCEANS
Argo is an international global network with a target of nearly 4,000 autonomous profiling floats drifting at set depths all over the world ocean and taking measurements of temperature and salinity from the sea surface down to 2,000 m depth. Observations are delivered via satellites within a few hours from acquisition to data centers where the data are processed and provided to users through a free and open-data access.

**Why Argo?**

Climate change is one of the most pressing issues of the century. The oceans have a fundamental influence on our climate and weather. They store, transport and exchange with the atmosphere large amounts of heat, water and gases. These exchanges dramatically affect global and regional climates in time scales ranging from days to centuries.

Long term high quality global ocean observations are needed to understand the role of the ocean on the earth’s climate and to predict the evolution of our weather and climate.

**Main challenges**

The international Argo program has defined, as a first priority, the maintenance of the global array of temperature and salinity measurements, with a need of about 1,000 new floats deployed each year by national programs.
.RowHeaders & Applications

Operational oceanography

Argo is the single most important in situ observing system required for the Copernicus Marine Core Service (CMEMS). Argo and satellite data are assimilated into CMEMS models used to deliver regular and systematic reference information on the state of the ocean for the global ocean and the main European seas.

Research

Argo provides an unprecedented dataset for researchers to study water mass characteristics and ocean variability ranging from seasonal cycle to interannual variability and climate variations at decadal time scales.

1. REDUCING OCEAN HEAT CONTENT STUDY ERRORS USING ARGO ERA DATA SUBSET IMPROVED ESTIMATES OF OCEAN HEAT CONTENT FROM 1960 TO 2015, LJING CHENG ET AL., SCIENCE ADVANCES, 2017

Global OHC change time series

Estimated of the ocean energy budget relative to the 1958-1962 base period
Acceptance tests of Euro-Argo profiling floats in seawater tank.

EURO-ARGO DATA USE:

10 PhD theses per year
2 peer reviewed papers per week
35,000 profiles per year
7 float types
EURO-ARGO RESEARCH INFRASTRUCTURE

Role

Euro-Argo sustains and optimises the European contribution to the international Argo program. The objective is to provide a world-class service to research and operational communities. Euro-Argo aims to develop the capacity to ensure one fourth of the global network and ensure that all data are processed and delivered to users in real time.

Strategy

To fulfill the future scientific needs, Euro-Argo is also developing the extension of the network towards high latitudes, biogeochemistry measurements and greater depth (6,000 m).

Several Euro-Argo pilot programs are ongoing and specific goals are under definition for monitoring marginal seas, high latitudes, the abyssal oceans and ecosystem parameters.

Organisation

In 2017, Euro-Argo involves 11 countries: 9 members and 2 observers.

In 2014, Euro-Argo became an ERIC (European Research Infrastructure Consortium), a legal entity that ensures its funding in the medium term through commitments of its members and observers at state level.

The Euro-Argo ERIC office is located in Brest, France. The office team, expert in all aspects of the program, is responsible for the overall coordination of the ERIC. It also participates in the procurement and deployment of floats.

Example of a standard profile measured by an Argo float: Mediterranean outflow into Atlantic Ocean.