Management of Argo floats parameters in the Indian ocean from Argo floats (2014)

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Abstract

Argo is a globalarray of 3,000 free-drifting profiling floats that measures the temperature and salinity of the upper 2000 m of the ocean. This allows, for the first time, continuous monitoring of the temperature, salinity, and velocity of the upper ocean, with all data being relayed and made publicly available within hours after collection.

Argo deployments began in 2000 and by November 2007 the array is 100% complete. While the Argo array is currently complete at 3000 floats, to be maintained at that level, national commitments need to provide about 800 floats per year. Additionally, Argo continues to work toward global ocean coverage. Frequently, even with the 3000 float target achieved, more floats are needed because some areas of the ocean are over populated while others have gaps that need to be filled with additional floats.

Besides float deployment, Argo has workedhard to develop two separate data streams: real time and delayed mode. A real time data delivery and qualitycontrol system has been established that delivers 90% of profiles to users via two global data centerswithin 24 hours. A delayed mode quality control system (DMQC) has been established and 60% of all eligible profiles have had DMQC applied.

When a float surfaces, the data are transmitted and the float's position determined (mostly through System Argos). The data are monitored by the Argo Information Centre in Toulouse

and then received by national data centers (DACs). At the DACs, they are subjected to initial scrutiny where erroneous data are flagged and/or corrected and the data are passed to Argo's two Global Data Assembly Centers (GDACS) in Brest, France and Monterey, California. The GDACs are the first stage at which the freely available data can be obtained via the internet. The GDACs synchronize their data holdings to ensure consistent data is available on both sites. The data reach operational ocean and climate forecast/analysis centers via the Global Telecommunications System (GTS).

The purpose of this project is to produce distribution maps of monthly and seasonal temperature, salinity and density data from Argo floats in the Indian Ocean. ODV (Ocean Data View) has been used for drawing maps and diagrams. ODV is a software package for the interactive exploration, analysis and visualization of oceanographic and other geo-referenced profile, time-series, trajectory or sequence data.

Keywords

Argo, Float, Ocean Data View, Temperature, Salinity, Density, Indian Ocean