



## **Global hydrographic overview of ocean variability**

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Estimates of hydrographic variability as measured by ARGO drifters in the near surface layer of the world ocean are discussed here. A gridded global field based on quality controlled ARGO data from the CORIOLIS data center produced by the French project ARIVO (Analyse, Reconstitution et Indicateurs de la Variabilité Océanique) is used. The amplitude of the seasonal cycle reaches down to more than 400m depth in some parts of the global ocean. Subseasonal and interannual fluctuations dominate between 30°-60° in both hemispheres down to more than 1000 m depth and in the tropics in the upper 400 m depth. The fluctuations in the North Atlantic are stronger and more deep reaching than those in the North Pacific. In the southern hemisphere, a signature of interannual variability exists in all three oceanic basins. In the tropics, temperature fluctuations are subsurface intensified, while salinity variability peaks close to the surface. Bi-annual fluctuations characterized by vertical propagation of salinity anomalies are observed in the upper 300m, predominantly in the tropical Pacific Ocean. Using the gridded ARIVO hydrographic data field reveals a global overview of large-scale baroclinic variability with the substantial advantage that its signatures in global salinity can also be discussed. The results presented here provoke a general view of how large-scale hydrographic variability is distributed on global scales. Thus, key regions of climate change can be identified which will lead to better understanding and improved prediction.