



## Abstract View

[Volume 18, Issue 12 \(December 1988\)](#)

### Journal of Physical Oceanography

Article: pp. 1855–1875 | [Abstract](#) | [PDF \(1.47M\)](#)

## The Water Masses of the Central North Atlantic in 1983–84

**John Harvey**

*School of Environmental Sciences, University of East Anglia, Norwich, U.K.*

**Michel Arhan**

*IFREMER/Centre de Brest, Plouzane, France*

(Manuscript received August 18, 1987, in final form May 17, 1988)

DOI: 10.1175/1520-0485(1988)018<1855:TWMOTC>2.0.CO;2

### ABSTRACT

Hydrographic surveys carried out in 1983–84 along both sides of the Mid-Atlantic Ridge between 24° and 53°N provide a detailed description of the well-known North Atlantic water masses with particular emphasis on their meridional distribution and zonal dissymetry. In the upper layers the dense horizontal sampling resolves the several narrow Gulf Stream extensions into the ocean interior, giving the image, in the Central Water density range, of a mosaic of mode waters separated by fronts. At intermediate depths a vertical shear in the distributions of the Mediterranean Water and Labrador Sea Water stands out, both water masses having their lower part displaced southwards relative to their upper parts. Bottom waters containing nearly 20 percent of pure Antarctic Bottom Water are observed at 50°N in the eastern basin, in contrast with the western basin where proportions greater than 10 percent were found only south of 36°N along our section. This water mass analysis also gives indications that strong mixing occurs at several water mass boundaries: between Subarctic Intermediate Water and (i) North Atlantic Central Water, (ii) Mediterranean Water, and between Antarctic Bottom Water and the overlying waters.

#### Options:

- [Create Reference](#)
- [Email this Article](#)
- [Add to MyArchive](#)
- [Search AMS Glossary](#)

#### Search CrossRef for:

- [Articles Citing This Article](#)

#### Search Google Scholar for:

- [John Harvey](#)
- [Michel Arhan](#)



© 2008 American Meteorological Society [Privacy Policy and Disclaimer](#)  
Headquarters: 45 Beacon Street Boston, MA 02108-3693  
DC Office: 1120 G Street, NW, Suite 800 Washington DC, 20005-3826  
[amsinfo@ametsoc.org](mailto:amsinfo@ametsoc.org) Phone: 617-227-2425 Fax: 617-742-8718  
[Allen Press, Inc.](#) assists in the online publication of *AMS* journals.