



Water mass variability over the Mid-Atlantic Ridge in the North Atlantic as inferred from ARGO Data

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Between 1998 and 2005 a set of ARGO drifter has been deployed in the North Atlantic in the transition area between the subtropical and subpolar gyre. The drifter have mainly been deployed along the former WOCE line A2 and cover the Mid Atlantic Ridge (MAR) area. Water mass properties over the ridge show strong inter-annual variability in the Central and Mediterranean Water, and point to changes in the vertical gyre boundary. The T/S properties from the floats are compared to the WOCE climatology and show negative anomalies during 1998-2000, followed by positive anomalies up to 2003. Concurrent timeseries from 3 moorings across the MAR have been investigated and show temperature and salinity variability to be related to changes in the position of the North Atlantic Current. Surfacing positions of the floats are used to obtain the flow field at 1500 m. The circulation on both sides of the ridge is following f/h contours closely. Over the ridge the average velocities are extremely small ($< 1\text{cm/s}$). Crossing of the ridge between the western and the eastern basin is restricted to the various fracture zones in the MAR. A strong interannual variability is noted in the selection of these fracture zones.