



Variability in transports along the subtropical Atlantic western boundary: Implications for monitoring the MOC

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Climate research in recent years, whether using models or paleo-data, has pointed to the importance of, or at least to a correlation between, the Meridional Overturning Circulation (MOC) and variations of the global climate system. Monitoring MOC variations has as a result come to be a focus of research efforts at an international level. One location where a monitoring system has been put into place is at 26°N in the subtropical Atlantic, where a joint United States-United Kingdom program is in place to monitor the meridional transports of water and heat using a variety of measuring instruments across the entire basin. Preliminary results from the US/NOAA portion of the program in the western basin (submarine cable, inverted echo sounders, bottom pressure gauges, hydrography) indicates a high degree of variability in volume transport at time scales ranging from days to months. The Deep Western Boundary Current (DWBC) integrated 500 km out from the coast is observed to fluctuate by 10-40 Sv ($1 \text{ Sv} = 10^6 \text{ m}^3 \text{ s}^{-1}$) over periods of 2-5 months. Variations of 5-10 Sv in the Florida Current transport are observed over periods of 2-5 months. Implications of this high level of variability for both snapshot section observations and the future time series monitoring array will be discussed. Results from the first year of the NOAA moored DWBC monitoring system will be presented along with the latest on the 20 year record from the submarine cable monitoring the Florida Current.