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Transport over the Mid-Atlantic-Ridge through the Faraday Fracture Zone

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Over the last decades there have been major changes in the water mass properties and production of Labrador Sea Water (LSW) in the subpolar North Atlantic.
In the framework of the German research project “North Atlantic” it is planned to examine the variability of deep water formation in the Labrador Sea as well as the transport variations of the North Atlantic Current (NAC). A focus of this study is on the path of the NAC over the Mid-Atlantic-Ridge (MAR) and on the LSW T/S- properties that are carried over the MAR in the LSW range below the NAC.
Next to the Charlie-Gibbs-Fracture Zone, the Faraday Fracture Zone (FFZ) is one of the major passages over the MAR. Since November 2009 three moorings have been collecting data at the western entrance of this fracture zone. The first dataset has been gathered in August 2010 when the three moorings have been recovered and redeployed.
It is the aim of this study to analyse the variability of water mass properties, NAC and LSW transports on seasonal to annual time scales. Satellite and Argo data will augment the time series from the three moorings to place them in a larger regional and spatial perspective.
First preliminary results show the core of the NAC over the FFZ for the first half of 2010. The T/S- time series from the moored instruments show extreme saline as well as fresh variations of the LSW, which are correlated with the variability of the current system.