

The **CLIVAR Mode Water Dynamics Experiment (CLIMODE)** studies the dynamics of eighteen-degree water (EDW), the subtropical mode water of the North Atlantic, created just within and south of the Gulf Stream during winter. Initiated in 2004, this process study has led to significant changes to the global parameterization of air-sea fluxes in areas of high winds and high evaporation. The observational component from 2005-2007 has provided *in situ* and satellite-based measurements to engage high-resolution modeling leading to better understanding of mode water formation, advection, and destruction. Recent work has identified a new energy pathway to extract energy from the mean flow for the Gulf Stream circulation that is active at ocean fronts under wintertime forcing, illuminated the pathways of formation, advection, and destruction of EDW within the recirculation gyre of the Gulf Stream, and assessed the degree to which our observational program fits into the longer-term decadal variability of EDW in terms of air-sea forcing, storage of heat, potential vorticity, and CO<sub>2</sub>. Analyses are still ongoing but a collection of eleven papers is currently in press at Deep-Sea Research II and can be presently found electronically (<http://dx.doi.org/10.1016/j.dsr2.2013.02.0xx>, where xx=18:28).