ASSESSING SOURCES AND SINKS OF REFRACTORY DISSOLVED ORGANIC CARBON IN THE DEEP ATLANTIC OCEAN

Refractory dissolved organic carbon (RDOC), with lifetimes of thousands of years, is the largest fraction of reduced carbon in the ocean, with a global stock of ca. 630 Pg C. Significant variations in the size of this pool could lead to significant changes in atmospheric CO\textsubscript{2} concentrations, with implications for climate. Biological processes in the euphotic zone are thought to be the main source of RDOC while sink mechanisms have been hypothesized but not identified. Identifying the sinks may be aided by determining sink locations in the deep ocean. An optimum multiparameter (OMP) analysis is set with thermohaline and chemical data from 5 recent CLIVAR Repeat Hydrography cruises throughout the Atlantic Ocean in order to objectively separate the effect of water mass mixing from non-conservative processes on the DOC variability, directly assessing sources and sinks of RDOC in the Atlantic Ocean.

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