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Upper ocean heat balance at the Kuroshio Extension Observatory (KEO)

M. F. Cronin

NOAA Pacific Marine Environmental Laboratory, Seattle WA, USA
(Meghan.F.Cronin@noaa.gov / Fax: 1-206-526-6744 / Phone: 1-206-526-6449)

As a contribution to the global network of OceanSITES time series reference sites, a surface mooring, the Kuroshio Extension Observatory (KEO) has been deployed since June 2004 in the Kuroshio Extension recirculation gyre at 32.4N, 144.6E. In this presentation, KEO data, in combination with satellite sea surface temperature fields, are used to evaluate the full 3-dimensional upper ocean heat budget and to determine the processes involved in changes in the recirculation gyre's heat content. The entrainment velocity from the residual of the mixed layer heat budget will be discussed in relation to the observed freshwater and carbon budgets at KEO. In addition, KEO surface flux measurements will be used as a reference for assessing numerical weather prediction model reanalyses and recommendations based upon this assessment will be discussed.