

Typhoon-induced vertical mixing measured by the Kuroshio Extension Observatory buoy

*Hidenori AIKI¹, Kohei Kameyama²

1. Institute for Space Earth Environmental Research, Nagoya University, 2. Graduate School for Environmental Studies, Nagoya University

We have analyzed the consistency of the vertical profiles of temperature and salinity and air-sea fluxes as observed by the Kuroshio Extension Observatory (KEO) buoy, with an intent to improve one-dimensional turbulence closure models used in OGCMs. The advantage of the KEO buoy data is the successful measurement of extreme weather events, such as typhoons and bomb cyclones with hourly time-resolution in the past 14 years. We have selected 7 typhoons in summer-autumn and 20 bomb cyclones in winter-spring, and compared with the results of the 1D-model experiments. In our buoy-model comparison system, the effect of mesoscale eddies and internal waves has been included by referring to the observed undulation of the seasonal thermocline. Both the timing and strength of the buoy precipitation data are well reproduced by the satellite precipitation data (GSMaP). Salinity profile in the 1D-model is yet to be improved by processes other than precipitation.