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A GLOBAL VIEW OF SMALL-SCALE TURBULENT MIXING

Ship-based observations of mixing are currently unpractical to undertake over very large regions. We use strain information from nearly globally distributed Argo floats to generate over 400,000 estimates of dissipation throughout the ocean. Energy dissipation is inferred in the upper 2000m from five years of Argo profiles (2006-2011) using the Gregg-Henyey-Polzin finescale parameterization. Temporally averaging estimates reveals clear spatial patterns of dissipation distributed across all the oceans. These results corroborate previous observations linking elevated dissipation levels to regions of rough topography, and produce heightened estimates in areas of high eddy kinetic energy. The continuous profiling of Argo floats produces time series exhibiting the temporal dependence of mixing, including seasonal variations correlating with fluctuations in near-inertial mixed layer energy.

<http://www.sgmeet.com/osm2012/viewabstract2.asp?AbstractID=12312>

Poster presentation

Session #:090

Date: 2/23/2012

Time: 17:00 - 18:00

Location: Poster/Exhibit Hall

Presentation is given by student: Yes