



Internal Waves and Mixing Above the Southwest Indian Ridge

Tamara Beitzel (1), Jennifer Mackinnon (1), T. S. Johnston (1), Robert Pinkel (1), and Glenn Carter (2)

(1) Scripps Institution of Oceanography, La Jolla, USA (tbeitzel@ucsd.edu), (2) University of Hawaii at Manoa, Honolulu, USA (gscarter@hawaii.edu)

Global climate models generally do not have mixing parameterizations that can simulate observations of elevated mixing over rough topography. Here we look at an area of heightened mixing in the Indian Ocean, just above the Southwest Indian Ridge (SWIR). Global models indicate significant barotropic tidal dissipation over the rough topography of the ridge though there have been few previous in situ measurements. Here we present 50 days of data collected over the SWIR by two moorings, each consisting of two McLane Moored Profilers, deployed on the north and south side of the ridge. Our analysis suggests elevated mixing is occurring in narrow tidal beams along the ridge. The magnitude, spatial structure, and variability of the internal tide will be presented, and the causes of elevated mixing in the Southwest Indian Ocean, as well as implications for turbulent dissipation and local and basin-wide energy budgets, will be discussed.