Abstract Submitted
for the DFD07 Meeting of
The American Physical Society

Biologically-Generated Turbulence by Two Krill Species KIMBERLY CATTON, DONALD WEBSTER, JEANNETTE YEN, Georgia Institute of Technology — Large schools of krill have been observed to generate turbulence at levels that contribute to both local and global mixing of the ocean. In these studies, estimates of krill-induced turbulence were determined with in situ acoustic profilers and calculated from krill swimming speeds; however, the turbulence level was not directly measured from krill-generated flow fields. In our study, we measured the flow fields around free swimming individual specimens of two species of krill, *Euphausia pacifica* and *Euphausia superba,* using an infrared Particle Image Velocimetry system. The krill-generated flow was characterized by a jet directed downward and to the rear with relatively large velocity magnitude in the core. Persistent vortices formed in the wake and eventually dissipated due to viscous effects. Regions of large energy dissipation rate were found near the body and in the wake of the krill at a maximum value of 1.5 W m^{-3} for *Euphausia superba* and 1.0 W $m^{-3}$for *Euphausia pacifica.* An estimate of biologically-generated turbulence will be calculated for each species of krill and compared to the field measurements of previous researchers.

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Date submitted: 02 Aug 2007 Electronic form version 1.4