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Research Interests

Small-scale vertical and horizontal mixing processes, dye release and Lagrangian drifter studies, numerical modeling of two- and three-dimensional turbulent flows, numerical modeling of physical and biological interactions.

Current Research

- Collaborative Research: LIDAR Studies of Lateral Dispersion in the Seasonal Pycnocline
- LIDAR and Numerical Modeling Studies of Small-Scale Lateral Dispersion in the Ocean
- High-resolution mapping of dye release experiments using airborne LIDAR
- Laboratory studies of stirring by small-scale geostrophic motions
- Numerical simulations of stirring by the relaxation of diapycnal mixing events

Recent Publications

- Sundermeyer, M. A.**, E. A. Terray, J. R. Ledwell, A. G. Cunningham, P. E. LaRocque, J. Banic, and W. J. Lillycrop, 2007. Three-dimensional mapping of fluorescent dye using a scanning, depth-resolving airborne Lidar. *J. Atmos. Ocean. Technol.* 24, 1,050-1,065.
- Pease, C., and **M. A. Sundermeyer**, 2006. Spatial and Temporal Variations of Richardson Number on Georges Bank. *Geophys. Res. Lett.* 33, L06608, doi:10.1029/2005GL024903.
- Sundermeyer, M. A.**, B. J. Rothschild, and A. R. Robinson, 2006. Assessment of environmental correlates with the distribution of fish stocks using a spatially explicit model. *Ecol. Model.* 197, 116-132.
- Lelong, M. P., and **M. A. Sundermeyer**, 2005. Geostrophic adjustment of an isolated diapycnal mixing event and its implications for small-scale lateral dispersion. *J. Phys. Oceanogr.* 35, 2352-2367.
- Sundermeyer, M. A.**, and M. P. Lelong, 2005. Numerical simulations of lateral dispersion by the relaxation of diapycnal mixing events. *J. Phys. Oceanogr.* 35, 2368-2386.
- Sundermeyer, M. A.**, J. R. Ledwell, N. S. Oakey, and B. J. W. Greenan, 2005. Stirring by small-scale vortices caused by patchy mixing. *J. Phys. Oceanogr.* 35, 1245-1262.
- Sundermeyer, M. A.**, B. J. Rothschild, and A. R. Robinson, 2005. Using commercial landings data to identify environmental correlates with the distributions of commercial fish stocks. *Fish. Oceanogr.* 14(1), 47-63.
- Ledwell, J. R., T. F. Duda, **M. A. Sundermeyer**, and H. E. Seim, 2004. Mixing in a coastal environment, Part I: A view from dye dispersion. *J. Geophys. Res.* 109(C10), doi:10.1029/2003JC002194.
- Sundermeyer, M. A.**, B. J. Rothschild, and A. R. Robinson, 2003. A study of environmental indicators and the predictability of commercial fish stocks. *ICES Marine Science Symposia-Hydrobiological Variability in the ICES Area, 1990-1999*, 200, 396-399.
- Sundermeyer, M. A.**, and J. R. Ledwell, 2001. Lateral dispersion over the continental shelf: Analysis of dye-release experiments, *J. Geophys. Res.* 106, 9603-9621.