Turbulent Dispersion in the Ocean, Progress in Oceanography

Garrett, C. et. al, 2006.
Gabriel T. Csanady: Understanding the Physics of the Ocean, 70: pp 113-125.

The mathematical framework for turbulent transport in the ocean is reasonably well established. It may be applied to large-scale fields of scalars in the ocean and to the instantaneous or continuous discharge from a point. The theory and its physical basis can also provide an interpretation of passive scalar spectra. Spatial variations in the rate of turbulent transfer can be related to the movement of the centre of mass of a scalar and to a formulation in terms of entrainment. The relative dispersion of a scalar with respect to its centre of mass and the streakiness of the concentration field within the relative dispersion domain need to be considered. In many of these problems it is valuable to think in terms of simple models for individual streaks, as well as overall statistical properties.