Dispersion Quantification from Drifter Triads: Observations and Model

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Dispersion statistics are generally computed from drifter pairs. This methodology accepts a certain directional bias. The bias can be reduced by analyzing drifter triplets instead. The unique design of the 2012 Grand Lagrangian Deployment (GLAD) experiment in the Gulf of Mexico resulted in a large number of drifter triads, ideal for such an analysis. Here we report on the resulting statistics on mean separation, area changes, and shape deformations. We assess the sensitivity of the statistics to the initial spatial separation scales. A regional ocean model is used to generate an estimate of the bias due to finite sampling in pairs, triplets, and higher-order polygons.