Tracer Release Experiments in the Ocean

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Deliberately tracer release experiments (TREs) are useful to quantify processes that are difficult to measure directly either due to a small signal, or high spatial and temporal variability, or both. I will discuss the use of use of TREs to quantify diapycnal and isopycnal mixing in the ocean, as well as tracking advective pathways and timescales. These experiments were all conducted by injecting a trace-gas (SF_6 or CF_3SF_5) into the ocean on a precise density level. The focus will be on experiments in the Greenland Sea, the Baltic and in the tropical Atlantic Ocean.