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Lagrangian particle dispersion in homogeneously stratified turbulence

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In this contribution an introduction on the similarities and differences between particle dispersion in "classical" 3D turbulence and stratified turbulence (including the regime relevant for marine applications) will be given. By following the particles along their trajectories in the flow, i.e. the Lagrangian approach, useful particle-based information can be extracted. The basic features of stratified turbulence will be elucidated and the effect of buoyancy on particle tracks, particle dispersion (relevant to understand vertical confinement of particles), particle-pair dispersion (relevant for aggregation and clustering), real fluid particles and inertial particles (like phytoplankton cells) will be discussed. Both horizontal and vertical dispersion will be compared to elucidate the anisotropy of the dispersion properties.