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Influence of the free surface on the distribution of buoyant particles in wavy flow MICHELLE DIBENEDETTO, Woods Hole Oceanographic Institution, JEFFREY KOSEFF, NICHOLAS OUELLETTE, Stanford University — Using numerical and analytical techniques, we examine the effects of a varying free surface on the distribution of buoyant particles. We simulate particle dispersal scenarios under a progressive deep water wave train as well as under an idealized wave spectrum. This work implies that waves on the surface of the ocean can affect the instantaneous distribution of particles. These distribution effects can provide insight into how to interpret surface observations of particles, such as microplastics, using net trawls.

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