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How observed drifter convergence corresponds to ocean surface convergence zones H. M. ARAVIND, MICHAEL ALLSHOUSE, Northeastern University — The identification of surface convergence zones is an established approach for identifying regions in the upper ocean where significant subduction occurs. While Eulerian fields such as the horizontal divergence of velocity can be used to estimate where instantaneous convergence zones occur, Lagrangian metrics such as dilation rate better identify subduction zones where vertical transport occurs over a time interval. Both of these analyses rely on velocity field information that may not be available for observational investigations, so drifters have been used to locate these convergence zones. However, inertia, buoyancy, and windage effects result in drifter trajectories that differ from the fluid trajectories in the upper ocean. First, we will evaluate the efficacy of using sparse drifter data to approximate the Lagrangian fields. Then, we use a Maxey-Riley framework that more accurately accounts for the phenomena impacting the drifter trajectories to calculate the Lagrangian fields and discuss how the observable fields differ from the fluid fields. This analysis will evaluate the effectiveness of using drifters and deployment procedures to identify the convergence zones.

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