



Across-shore eddy transport off Central California

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The impact of mesoscale and submesoscale eddies on the across-shore transport observed off Central California is studied using 65 quasi-Lagrangian subsurface trajectories of isobaric RAFOS floats launched in the California Undercurrent between 150 and 600 m in 1992-2004. About 50 loopers, i.e. floats demonstrated two or more consecutive rotations of the same sign, have been identified from the data, most of them (>75%) trapped in anti-cyclonic eddies travelling roughly westward. Assuming the looping floats were translated by nonlinear eddies, their geographic distribution, the mean period of rotation, characteristic swirl velocity, size, and eddy kinetic energy were estimated.

High-resolution model output (Regional Oceanic Modeling System [ROMS] with resolution of 3.5 km, University of California, Los Angeles) is used to understand and estimate westward transport and mesoscale eddy variability observed in the RAFOS floats. Possible mechanisms of eddy formation and role of meso/submesoscale eddy activity in across-shore transport off Central California is discussed.