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Near-Surface Velocity Variability at Inertial and Subinertial Frequencies in the Vicinity of the California Current

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ABSTRACT

Observations of the horizontal velocity field in the upper 150 m, made from the Research Platform FLIP as it drifted off the coast of Baja California, were used to examine the velocity of the velocity field and its relation to local wind forcing. At subinertial frequencies a spatially varying flow field associated with the California Current System was encountered. In addition, there was low frequency near-surface flow to the right of the wind stress that decayed with depth. At near-inertial frequencies victory motion with an amplitude of up to 40 cm s^{-1} was observed. Most of the energy in the near-inertial frequency band was associated with modes with vertical wavelengths large compared to the thickness of the mixed layer. The local wind alone had neither the strength nor the variability needed to directly produce the observed inertial period variability. It is suggested that FLIP encountered regions in which the shear of the quasi-geostrophic flow resulted in localized intensifications of near-inertial motion.

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