

identification of eddy viscosity profile in the marine surface layer in transient wind conditions.

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The vertical profiles in ocean surface layer were sampled in the microtidal NW Mediterranean sea under unsteady wind conditions. Current velocities in the surface layer were simultaneously measured by ground based High Frequency (HF) radars, a downward looking freely drifting ADCP and an upward looking ADCP mounted on an autonomous underwater vehicle. Hydrology was recorded along the water-column thanks to local CTD. The sensitivity of the velocity profiles to eddy viscosity distribution is investigated using stochastic optimal control techniques, with and without stratification.

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