

Export flux of POC in the main stream of the Kuroshio

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Abstract

Particulate organic carbon (POC) export flux was measured using both a drifting sediment trap and a ^{234}Th approach in the Kuroshio in August, 2006 to obtain a contemporary estimation of POC export from the euphotic zone. The POC fluxes measured by sediment traps and the ^{234}Th approach at 65, 90, 120 and 140 m ranged from 67 to 20 $\text{mg m}^{-2} \text{d}^{-1}$. The POC flux observed here is a factor of 2 higher than previous investigations suggesting that PP and POC flux in the Kuroshio are increasing. Possible drivers may include upwelling of subsurface water in the Kuroshio (driven by strong currents) or the increasing frequency of typhoons augmenting vertical mixing. Presently, we are unable to definitively determine the relative importance of these factors in driving higher primary production and POC export flux.