Monday, October 8
Poster Session 1
16:00–18:00

Poster 113

FIRST AUTONOMOUS BIO-OPTICAL PROFILING FLOAT IN THE RED SEA: A USEFUL TOOL TO ESTIMATE PARTICULATE ORGANIC CARBON EXPORT

The mesopelagic zone of the Red Sea, the region between 150 and 1000 m, represents an extreme environment due to low food concentrations, high temperatures and low oxygen waters. Some studies revealed that mesopelagic migrators are an important component of the biological pump, since they feed near the surface during the night and defecate at depth during day. It has also been suggested that the mixed-layer pump could play a fundamental role in carbon export from surface to the deep ocean in this region. However, the processes responsible this export into the mesopelagic are still poorly quantified and understood due to lack of observations. Using autonomous optical backscattering observations made by profiling floats, we will investigate the seasonal carbon export flux into the mesopelagic layer. Specifically, we will present results on the role of the deepening of the mixed layer depth during winter as a mechanism to export carbon into the mesopelagic. Thus this study will attempt, for the first time, to estimate particulate organic carbon fluxes and to improve our understanding of the biological carbon pump in the Red Sea.

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