



# Fernanda Hendrikx Freitas

## “Daily to multi-year variability in particle production, growth, size and export in the North Pacific Subtropical Gyre”

Optical properties are excellent proxies for particle concentration, particle size, community production and respiration in the open ocean. In this talk I will show how we can use the growing dataset of high-quality optical data (e.g. particle backscattering, particle size distribution, chlorophyll fluorescence, oxygen optodes) in the North Pacific Subtropical Gyre to better understand the drivers, pathways and fates of carbon in the ocean. I will show examples that highlight the role of mesoscale eddies in controlling particle concentration in the upper water column, as well as the variability in the amplitude and phase of daily cycles of particle production and loss over a multi-year time record. I will also present newly collected observations from a high frequency biogeochemical profiling float which is providing insights regarding particle export