

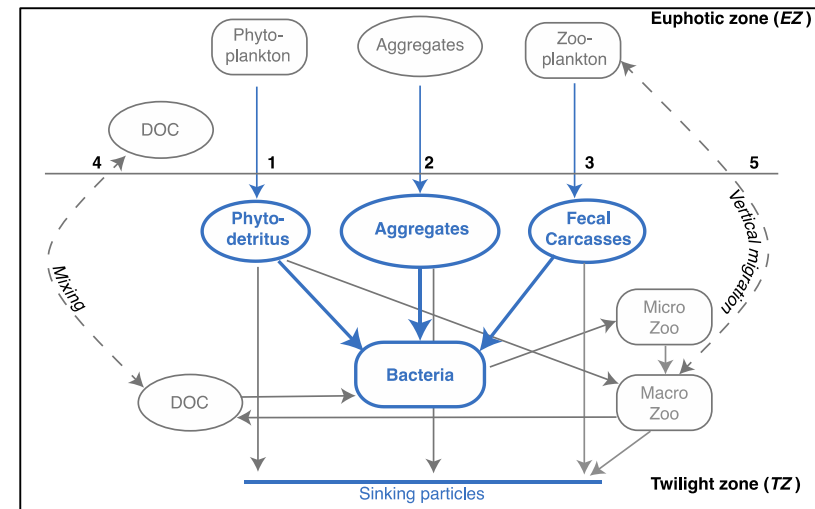
Surface versus subsurface control of microbial attenuation of sinking particulate flux in the mesopelagic ocean

SCIENCE GOALS

- I. Determine the magnitude of microbial respiration on particles as a sink for carbon throughout the upper mesopelagic
- I. Determine rates of nitrogen remineralization in the mesopelagic and how they compare to particulate delivery of nitrogen.
- II. Improve our conceptual model of particle degradation by incorporating assessment of particle-attached microbes and how they vary as a function of surface phytoplankton community, sinking particle composition, and sinking speed.

TEAM MEMBERS

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FIELD WORK

Process Ship

- RESPIRE traps to measure particle-associated microbial respiration *in situ*
- Stable isotope tracer incubations ($^{15}\text{NH}_4^+$) for nitrification rates at 5 or more depths in the water column
- Particle-attached microbial community composition via 16S rRNA gene community profiling with archived samples for metagenomics
- $[\text{NH}_4^+]$ profiles

