

OSM 2020 Arctic Synthesis workshop— particle breakout group

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Halocline particles

- In situ scavenging—Fe and Mn oxides scavenging REEs, Th isotopes, Co?
- Transport from shelf: see from $\delta^{13}\text{C}$, Biogenic Si/POC
- Open questions:
- What is timescale of transport? Seems to be faster than estimates from Ra along GN01 (years)
- ^{234}Th suggests it's fast (months)
- See large particle transport (particle residence time months)
- Timescale of scavenging?

Benthic Nepheloid Layer

- BNL can show up clearly in particulate trace metals, but may not show up in beam attenuation (cp)
 - Discussed the reasons for this: cp not very sensitive to inorganic particles, so low concentration BNLs may not show up in cp
 - Low concentration BNLs may still be very reactive, especially if enriched in Fe and Mn oxyhydroxides
 - Composition of resuspended particles AND concentration both matter to the reactivities of BNLs: how can we incorporate reactivity into our understanding of the distribution of BNLs that we have from optics
- Seth John idea “sorceress”: exploring how to incorporate BNL reactivity into his AWESOME OCIM model, which already has BNL distribution from Gardener et al's compilations of beam attenuation
- Wilf Gardner, Mary Jo Richardson, Alexey Mishonov to work with Phoebe Lam and Yang Xiang to assess relationship between cp and measured particle