Theme 2 – Abiotic scavenging

Scoping the future

1. Short term – tools in hand

- Conceptual particle/TEI scavenging model synthesis (Fitzsimmons, Buck) and follow on testing candidate processes in models (various).
- Description of particle (and colloid) dynamics in the multi-element context. (Lam, Lerner, Wong, Fitzsimmons).
- Comparison of TEI Kd estimates and residence times (Hayes, Lam, Seth John)
- Ligand cycling and scavenging (Buck, Fitzsimmons, Eliot Sherman)
- Statistical meta-analysis (Plancherel)
- Characterizing strong ligands for Thorium (Hayes and Buck)

2. Medium term – Recommendations for remaining GEOTRACES

- Vitro-traces to get at Kds and other rate information for all the TEI's (Seth John).
- Adding Optical techniques – Transmissometer, LISST, Underwater Visual Profiler, Optical image bank, etc.
- Slime characterization and dynamics
- Temporal and geographical variability of scavenging in nepheloid layers
- Temporal and geographical variability of scavenging by dust
- Characterization of preformed endmembers in/near water mass formation regions
- More use of existing time series stations (e.g. porcupine abyssal plain, BATS, PAPA(Line P)) as GEOTRACES sites

3. Long term – what comes after GEOTRACES?

– Ligands

– Repeat Geochemistry

– Organic GEOTRACES[Program]

– Biogeotraces [Program]

– Application of Satellite observations to TEI's

– Mapping sediment TEI accumulation and sources

– Focus on pollutants [Program]

– Autonomous instruments [Program]

– Process studies (e.g. Microlayer, Photochemistry, Organic coatings)