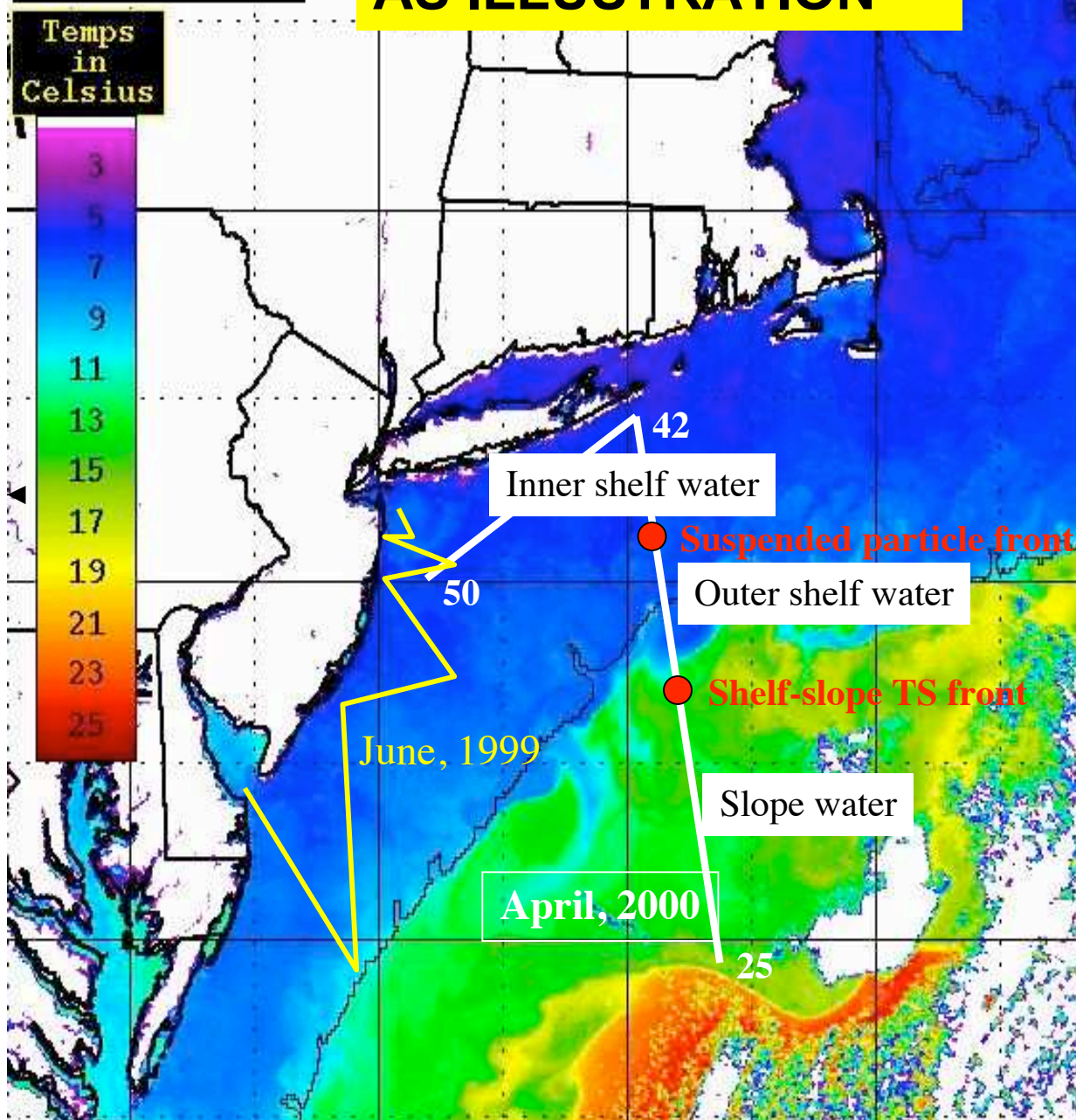


Geotraces NG line

- Evaluate changes in particulate matter composition along shelf-open ocean transition.
- Estimate biogenic, authigenic, and refractory components in order to understand particulate speciation of metals and estimate fate upon sinking.

noaa-14
2000/04/01
09:35:22

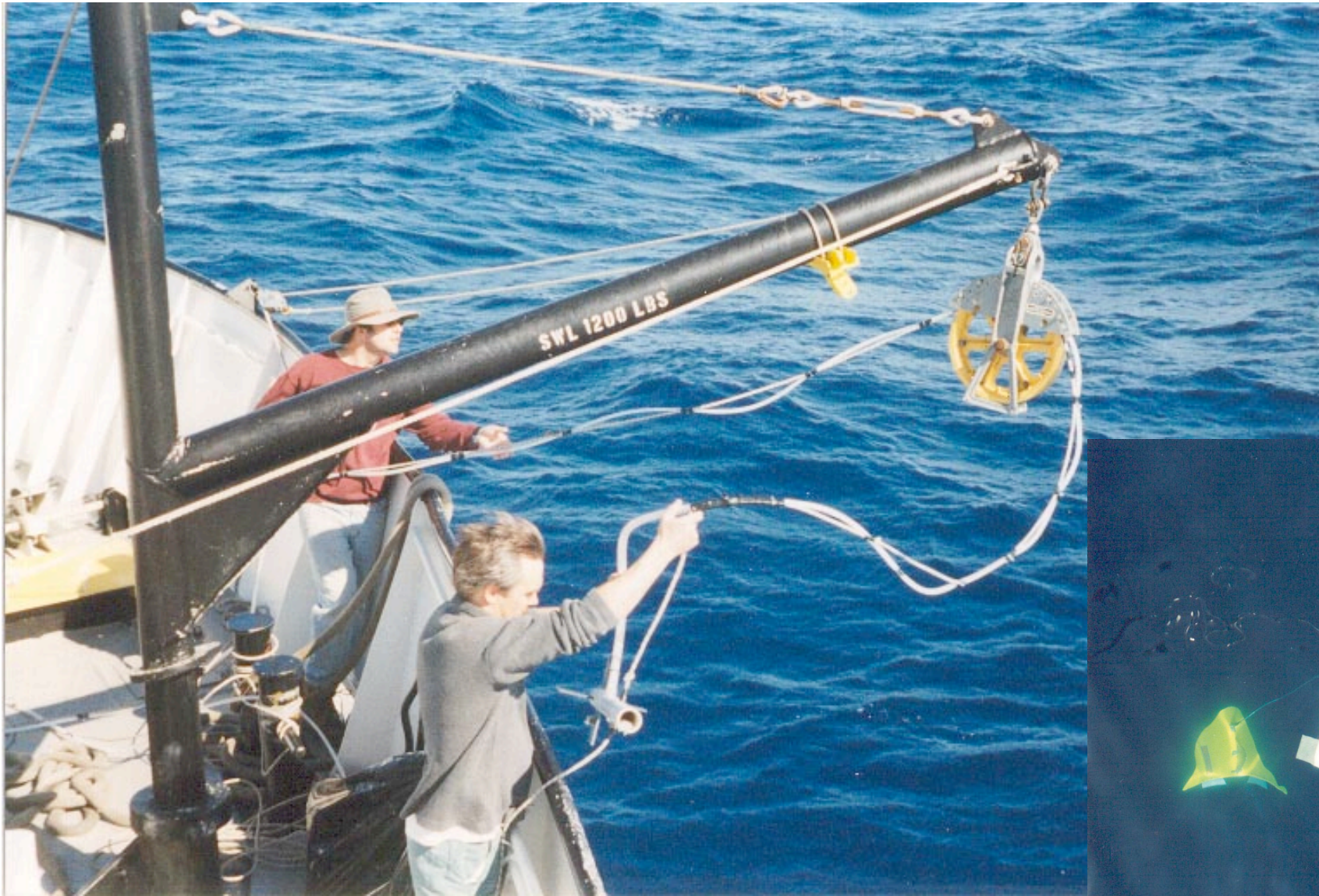
PRELIMINARY DATA AS ILLUSTRATION



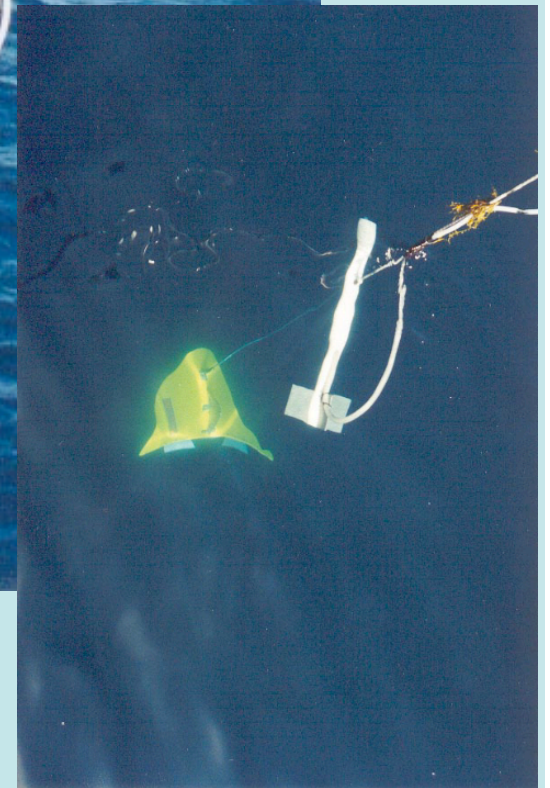
Phytoplankton sampling
in mid-Atlantic Bight
surface waters

Methods:

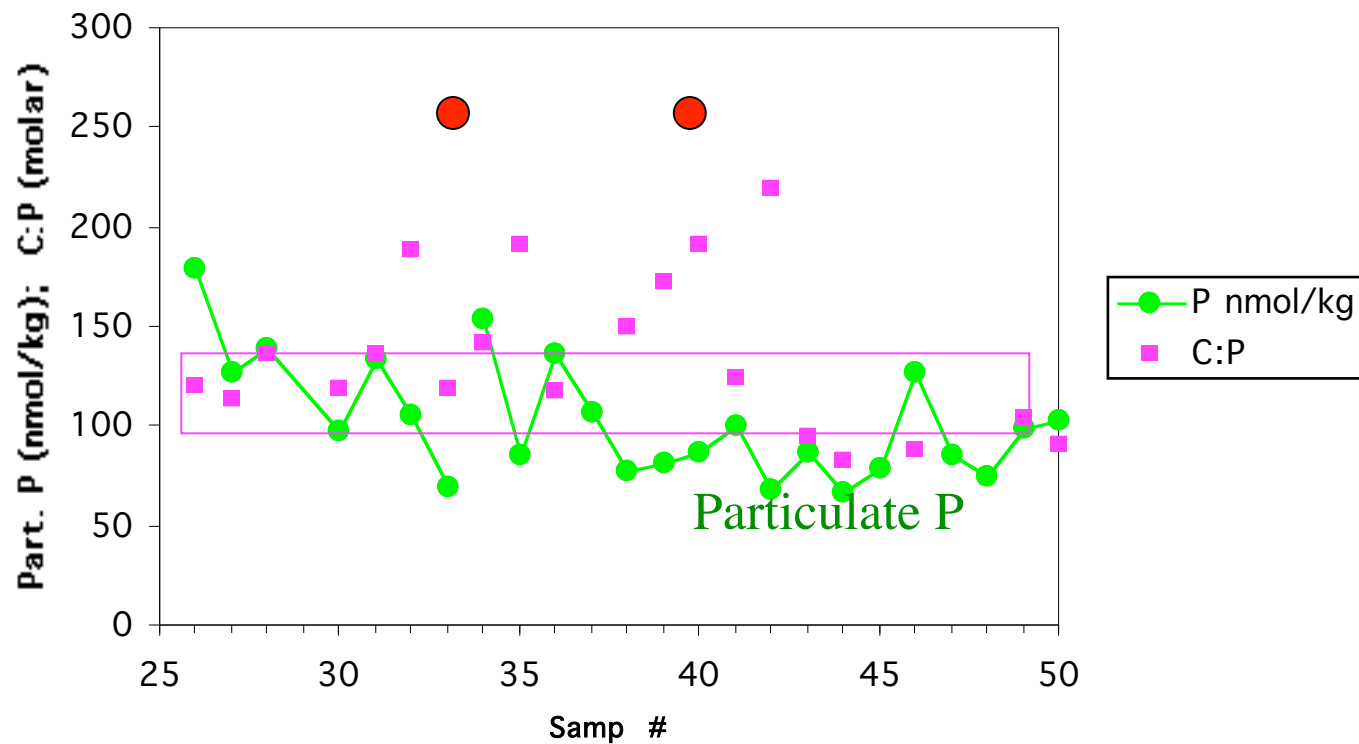
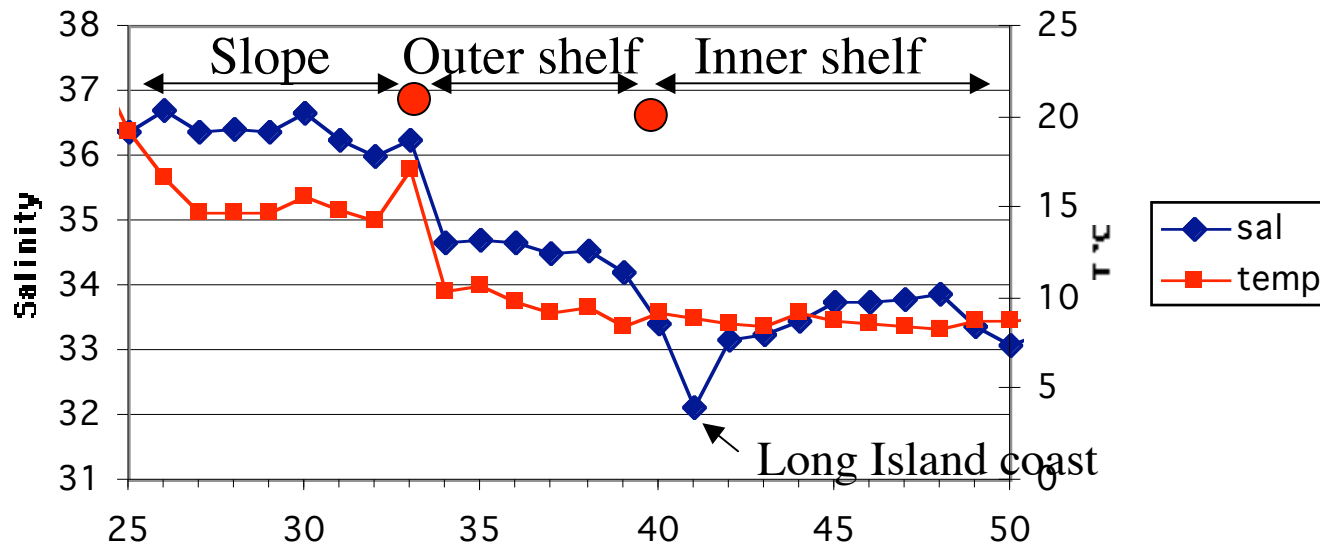
1. Underway clean surface pumping from towed fish.
2. Filtration of 5-20L on 47mm Quartz fiber filters (0.8um nom.pore size).
3. Determination of metals, P by ICP-MS
C,N by CHN analyzer



Surface water sampling using towed fish

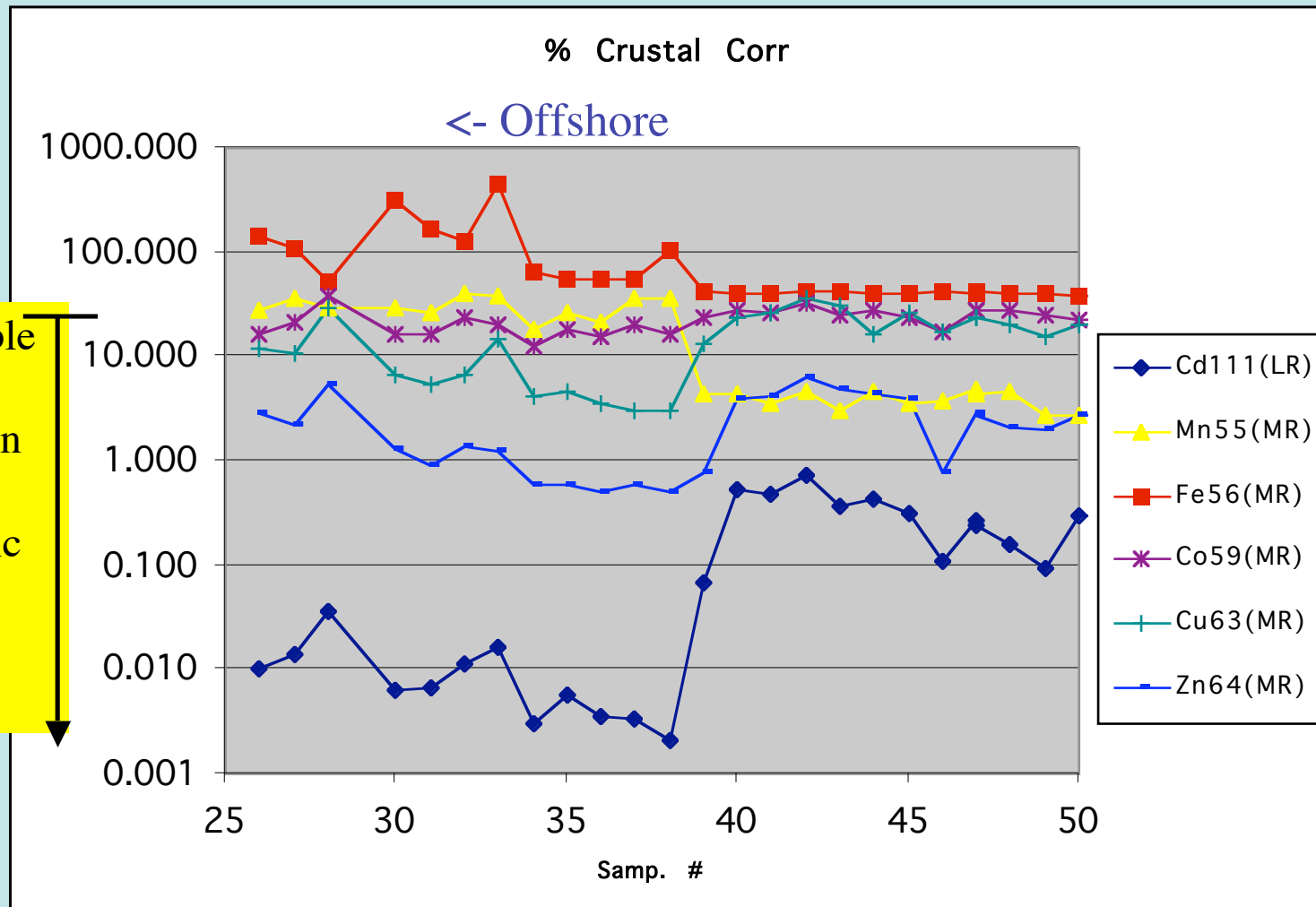


April, 2000

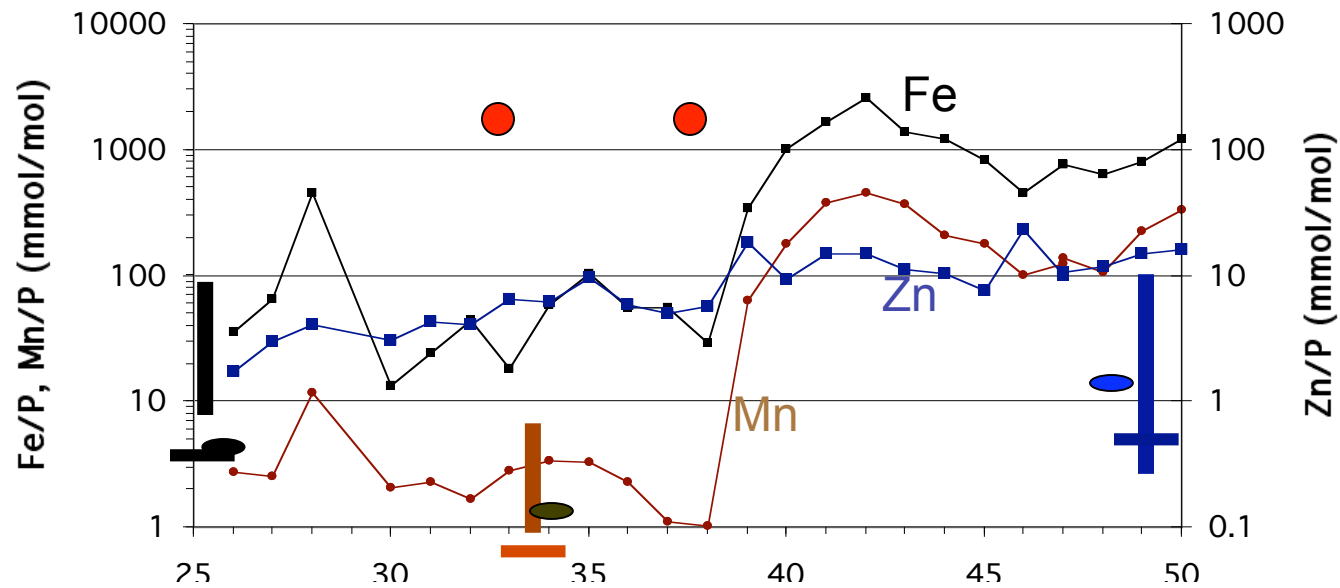


Estimated aluminosilicate fraction based on mean crustal metal/Al

Acceptable
for
estimation
of
authigenic
and
biogenic
fractions

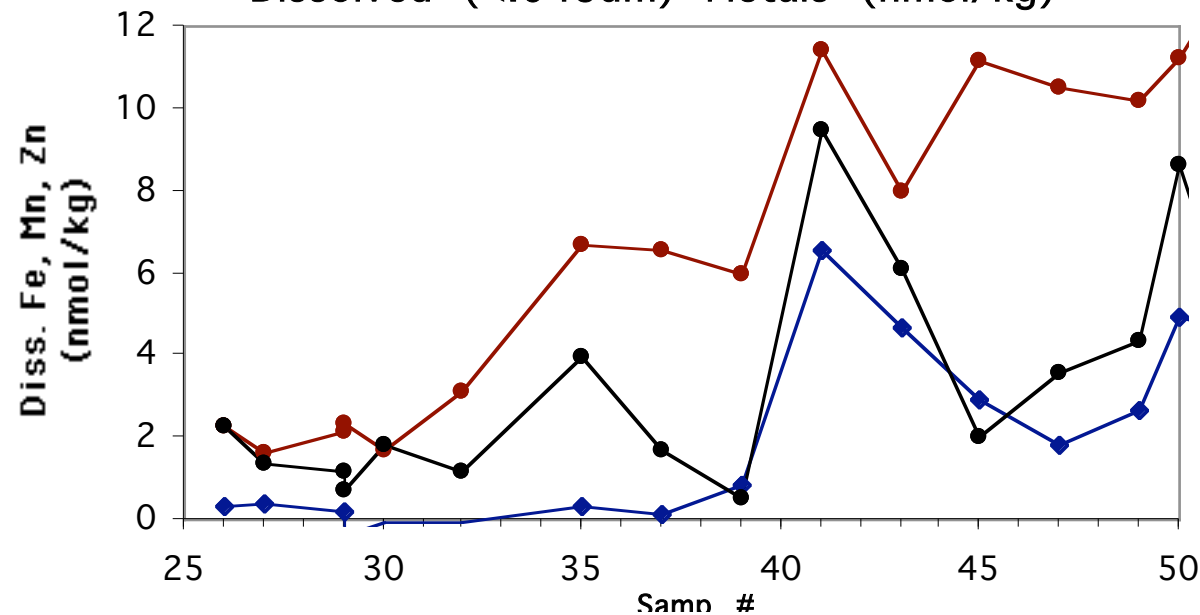


Metal/P (mmol/mol) LOG SCALE!



<-- OFFSHORE

Dissolved (<.045um) Metals (nmol/kg)

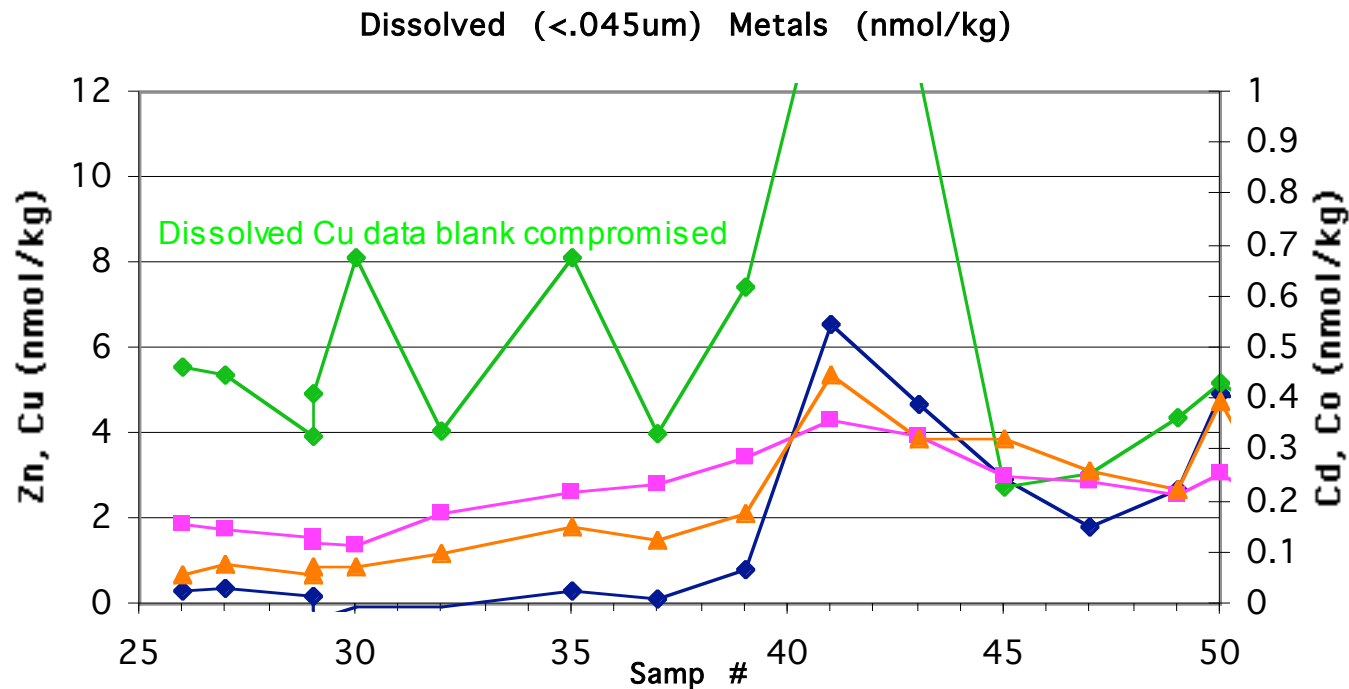
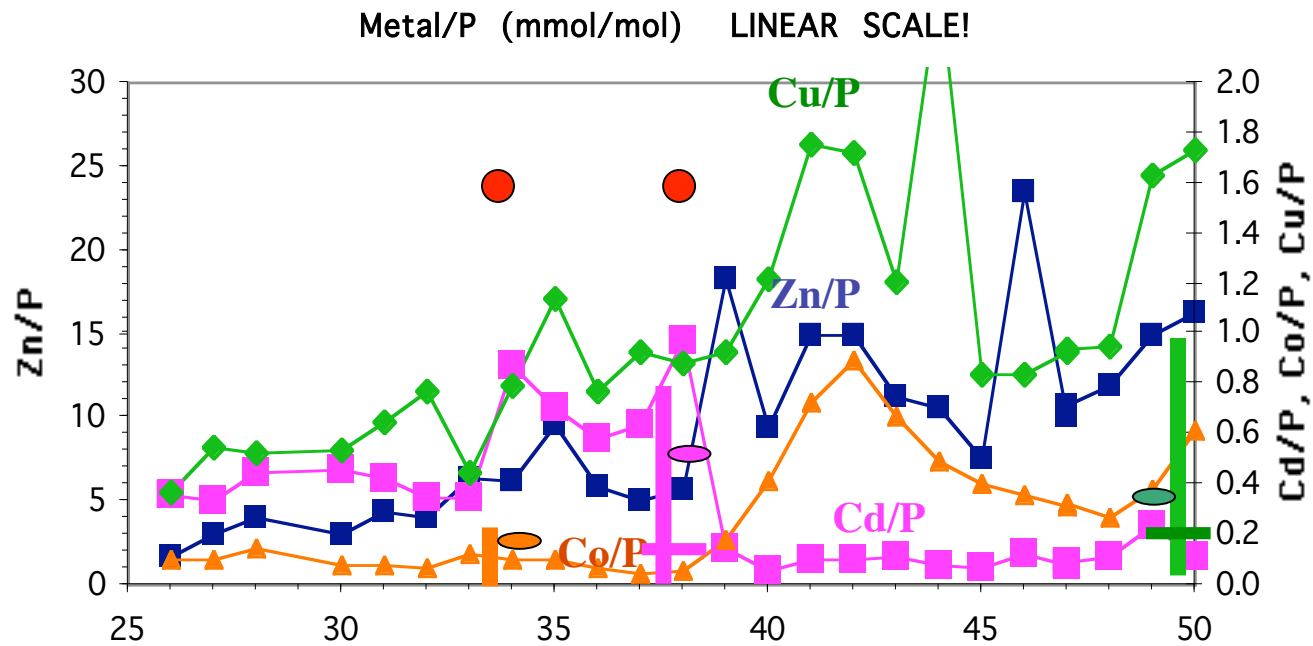


○ Oligotrophic N. Atlantic
Kuss and Kremling, 1999

— Lab culture,
Ho et al., 2003
Quigg et al., 2003

■ Range of culture data

Bioactive Me/P



GEOTRACES Atlantic NG line

- Extend similar particulate measurements to full profiles
- ocean margin transitions on E and W ends of transect may be the most dynamic gradients we see in particulate TEI composition
- full particulate profiles in W vs. E basins will tell us about particulate TE sources - vertical vs. lateral
- Need dense sampling -> filtration from Go-Flos (> 1 station per degree longitude?)
- In situ pumps needed as well to meet core TEI sampling requirements

Geotraces Intercalibration cruise

