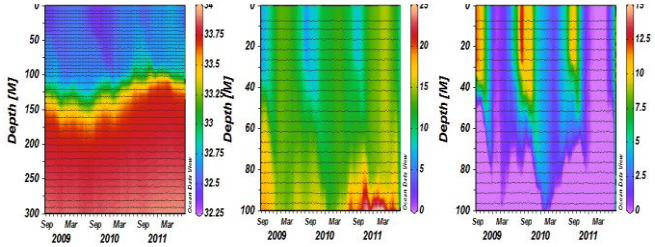
# Evaluating the Controls of Dissolved Organic Matter Accumulation, its Availability to Bacterioplankton, its Subsequent Diagenetic Alteration and Contribution to Export Flux

## SCIENCE GOALS

- I. Determine the fraction of NPP/NCP accumulating as dissolved organic carbon (DOC) at the various ecosystem / carbon cycling state
- II. Determine the flux of the most labile fraction of DOC to bacterioplankton (i.e., bacterial carbon demand; BCD)
- III. Determine DOM bioavailability to microbes and the fraction of the seasonally accumulated pool that persists for weeks to months.
- IV. Assess DOM diagenetic state (compositional variation) over varying ECC states and between basins.
- V. Estimate DOC export from the EZ into the MZ.




## TEAM MEMBERS

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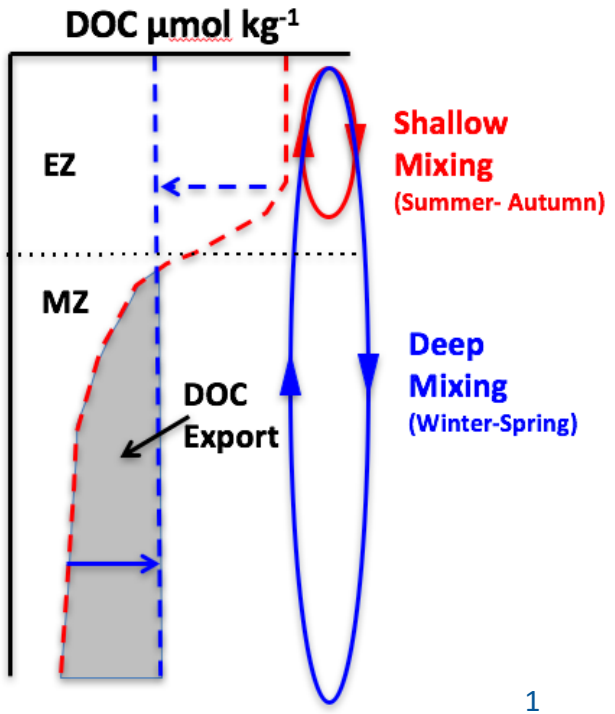


EXPORTS
EXport Processes in the Ocean from RemoTe Sensing

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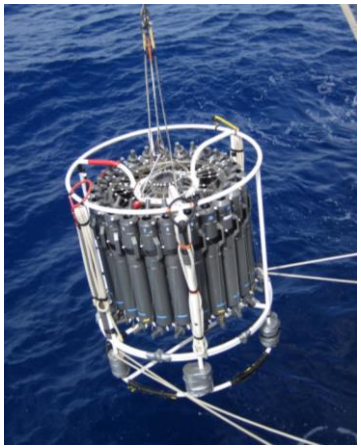
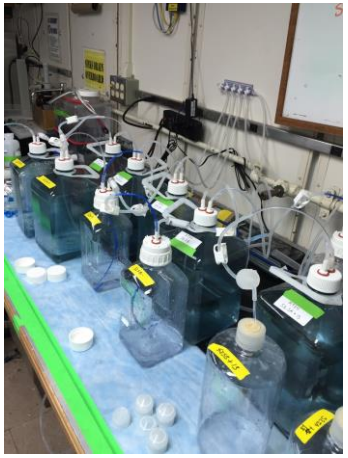
## Field work

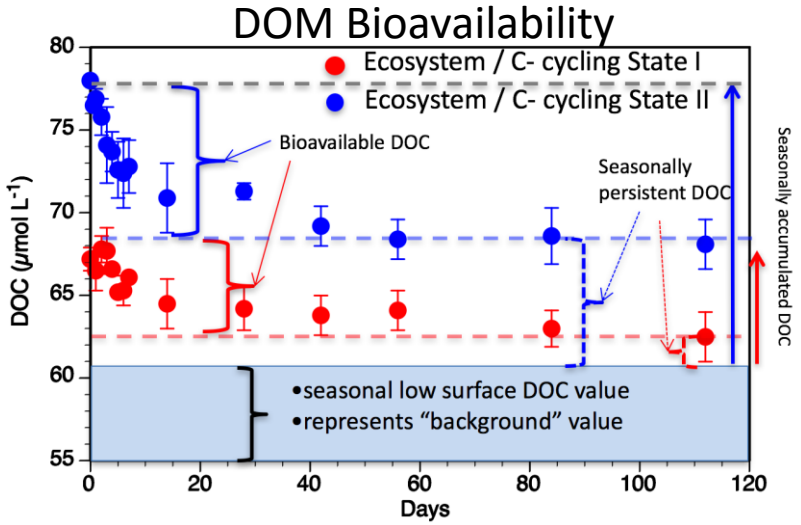
- Both Ships
  - DOM 2-4 casts/day over top 500m an occasionally to 1000 m (8-12 depths).
  - Measured by high temperature combustion
- Process Ship
  - Bacterial Production - 2 casts per day 10 depths 0-500 m. Measured by 3H-Leu incorporation
  - Dissolved combined Amino Acids or Sugars via HPLC – diagenetic proxy; ~10 casts over 10 depths
  - DOM Bioavailability estimated using microbial remineralization experiments 3X per cruise



*Sampling DOM*



*Sampling remineralization exp*

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