

OCB Plenary II

Q: How is climate change affecting Southern Ocean?

1) Circulation

2) CO₂ fluxes

3) Prod/ecosystems

How do we answer it?

Observations

- pCO₂ time series (polynyas, sea ice edge)
- profiling floats: pCO₂
- hydrography (30°S section)
- shelf overflows (CFCs)
- ACC transport (p sensors)
- profiling floats (O₂, NO₃)
- atmospheric O₂/N₂
- satellite Chl trends (L+G)

Models

- fronts - regions of greatest signal
- spatial patterns - c.f. climate detection/attribution
- high resolution models of deep water formation

What are the obstacles and opportunities

- uncertain baselines (e.g. ACC, pCO₂)
- observations during winter
- underway sampling on science research and support ships