Oceanographic Observations During VOCALS, Leg 1

Arica, November 6th and 7th, 2008


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Why are we looking for eddies in the STRATUS region?

- 1-D balance does not explain observations.
- Input of cold and fresh water is required to close the budget.
- Upwelling region along the Chilean/Peruvian coast is a likely source of eddies for the STRATUS region.
- But, we don't know much about the properties of these eddies...

Source: Bob Weller (unpublished)
Mesoscale features as seen from satellite altimetry and the R.H. Brown's current profiling system

- Found several cyclonic features along 20°S
- Diameter of O(200 km)
Hydrographic and velocity structure of mesoscale features

Scales:

- 150-200 m deep
- 30-50 cm/s
- Weak surface T/S signal
Hydrographic and velocity structure of mesoscale features

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Cold Lower Layer

Salinity Minimum

Northwards Velocity

Temperature

Salinity
Mean Atmospheric Forcing at STRATUS/DART

WHOI Stratus buoy 2007
Mean wspd 6.6 m s\(^{-1}\)
Mean incoming swr 205.7 W m\(^{-2}\)
Mean incoming lwr 371.8 W m\(^{-2}\)
Mean sst 20.09°C
Mean at 18.97°C

DART buoy 2007
Mean wspd 5.4 m s\(^{-1}\)
Mean incoming swr 178.2 W m\(^{-2}\)
Mean incoming lwr 378.5 W m\(^{-2}\)