Cast 4

Station 3

January 8, 16:53

-75 00, -170 00

2815 m depth

This station is south of the band of sea ice. It was chosen to be an offshore station to sample water properties not affected by conditions on the shelf. There was some issue with the logging computer. The up and down casts were stored separately (as casts 4 and 4A). The cast extended to 1000 m to sample through the CDW layer.

This station has a clear indication of a surface mixed layer with uniform properties. A deeper winter water layer is vary thick with uniform properties. A clear Tmax occurs at 540 m indicating upper CDW. The cast did not go deep enough to see the salinity max indicating core lower CDW.

The surface layer is 40 m thick with very uniform properties (-0.8C, 34.0). The surface fluorescence is low (1.5 mg/m3).

A deeper, very uniform, layer spans 50 to 220 m depth with a temperature of -1.8C and salinity of 34.1. Oxygen confirms the uniform vertical structure of this layer. This is the mixed layer from the winter (winter water). Its uniform structure indicates either recent vertical convection or very weak turbulence (due to sea ice cover?).

Below the winter water is a broad layer of warm water spanning several hundred meters. The Tmax and O2min occur at 540 m. Temperature at this depth is 1.4C and salinity is 34.7. This layer is clearly upper CDW although the temperature is a bit cooler than the pure type (at 1.8 C).



