

Preliminary report of sediment cores collected in the Southern Ocean during the MR03-K04 cruise.

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Past variation and changes in the thermohaline circulation and biogeochemical cycle recorded in marine sediment provide important information to predict the future global climatic change. Since a large part of southern hemisphere is occupied by ocean, southern ocean significantly influences to climatic change of southern hemisphere.

We decide two themes; 1) carbon cycle, and 2) phase lag or synchronization of the sea surface environment between southern and northern hemispheres, which are most important things in paleoceanography. We make hypothesis for each theme and verify it.

Total four piston, two gravity and four multiple cores were collected in the Chilean marginal sea and Magellan Strait. The PC-01 and MC-01 were collected at the southwestern off Valparaiso, Chile (36-13S, 73-41W, water depth 1023m). The PC-02, the GC-01 and the MC-02 were collected at the southern from PC-01 (39-59S, 74-25W, water depth 1064m). The PC-03 and the MC-03 were collected at the mouth of Magellan Strait in the Pacific side (52-52S, 74-05W, water depth 560m). The PC-04, the GC-02 and the MC-04 were collected in the Magellan Strait (53-34S, 70-40W, water depth 470m). In general, the sediments at all sites are composed of homogeneous fine-grained hemipelagic sediments with various degrees of bioturbation throughout. The sediment of PC-01 and 02 are dominated by Clayey Silt-Silty Clay with varying amount of diatom and nannofossil. Sand content is highest at PC-03, while Clay content is highest at PC-04. Sediments of PC-01, 02 and 03 have wide variety of microfossils, being PC-03 the most diverse, although PC-04 has little amount of foraminiferas. In this presentation, we will show not only the preliminary results of sediments but also the outline of sediment observation and beautiful views of the study area in the Patagonia.