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## Abstract Preview - Step 3/4

- print version -

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Session: GG-2 Arctic and Antarctic past ice sheet dynamics and paleoclimate evolution

Polar program: None

**Title:** Pleistocene paleoceanographic changes of the Southern Ocean off the Ross Sea

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**Text:** A 8.4 m long gravity core RS15-GC107 was collected from a seamount in the Southern Ocean off the Ross Sea (68°04.0741'S, 178°37.9066'W, 3050 m deep). Geochemical proxies (biogenic opal, CaCO<sub>3</sub>, TOC) and oxygen isotope of planktonic foraminifers (*Neogloboquadrina pachyderma* (sin.)) were measured in order to reconstruct paleoceanographic changes of the Ross Sea Sector of the Southern Ocean. Because CaCO<sub>3</sub> was relatively well preserved in upper 6 m of the core, the age of the upper part was constrained through planktonic foraminifer oxygen isotope correlation to LR-04 stack. CaCO<sub>3</sub> became to be preserved from 6.2 m of core RS15-GC107, whereas biogenic opal decreased from this interval. The changes at 6.2 m of core RS15-GC107 most likely corresponded to the beginning of the Mid-Pleistocene Transition (MPT) climate change. This means that the Ross Sea Sector of the Southern Ocean shifted from relatively more siliceous ocean to carbonate ocean during the MPT. Oxygen isotope values became lower during the interglacial periods with larger glacial-interglacial contrast at 1.5 m of the core, ~430 ka, which corresponds to the Mid-Brunhes Event (mWP). Interestingly, glacial planktonic Oxygen isotope values also became relatively lighter from ~430 ka than before. This may suggest that post-mWP glacial periods became more stratified along with increased ice volume.

**Preferred Presentation Type:** Oral Presentation

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[Back](#)