

**Abstract Preview - Step 3/4**

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

Polar program: None

**Title: Paleoceanographic changes during the past one million years in the Ross Sea**

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Text: A 11.75 m-long core RS15-LC42 was collected from the Central basin in the Ross Sea (71° 49' S, 178°35' E, 2084m deep) in 2015, by the Korean RVIB *Araon*. The chronology is inferred by paleomagnetism and diatom biostratigraphy, and the core covers about one million years. Magnetic susceptibility, grain size, oxygen and nitrogen isotopes, and concentrations of total organic carbon (TOC), opal, and CaCO<sub>3</sub> were measured. Foram oxygen isotopic compositions were analyzed, and elemental compositions were scanned by ITRAX system. The core is composed of two alternating facies: 1) well-laminated greenish gray diatomaceous mud, and 2) massive light gray sandy mud. Well-laminated facies tend to include higher TOC, opal and carbonate compared to the other, so it is likely that they were deposited during interglacial period, but the possibility of remobilizing of sediments from the outer shelf to continental slope during glacial period cannot be excluded. Around 280 cm (about 0.25 Ma) from the core top, the massive facies is dominant in the upper part, whereas the laminated facies is dominant in the lower part. This indicates that there was a major shift in the depositional condition in the Central Basin at this time and which could be related with the extensive glaciation during Marine Isotope Stage (MIS) 8 in the McMurdo Sound (Christ and Marchant, 2017). Further work like clay mineral assemblage is necessary in order to ascertain whether the laminated sediments are primary or reworked.

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