

# THE 2<sup>nd</sup> KOREA GEOSCIENCE UNION 연례학술대회

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**ABSTRACT BOOK**

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## Paleoceanographic changes during the past one million years in the Central Basin, northwestern Ross Sea

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The Central Basin is located in the northwestern Ross Sea continental slope and rise. A 11.75 m-long core RS15-LC42 was collected from the southwestern part of the Central Basin (71° 49' S, 178°35' E, 2084 m deep) by the Korean RVIB Araon in 2015. This core covers about 1.3 million years, and the chronology is established based on paleomagnetism and diatom biostratigraphy. Ohneiser et al. (2019) reported Brunhes-Matuyama reversal (0.78 Ma) at 8.26 mbsf of this core, and according to paleo-intensity records the sedimentation is almost continuous although there is a hiatus near 9.54 mbsf. LC42 core is composed of two distinct sedimentary facies: 1) well-laminated greenish gray diatom-rich silty mud, and 2) massive/bioturbated light gray sandy mud. Well-laminated facies include high content of TOC, opal and carbonate with no IRD (clasts > 2 mm), while massive/bioturbated sandy mud facies show high MS value and bear IRDs. Clay mineral composition indicates that illite is rich in facies 1, while smectite and kaolinite is relatively rich in facies 2. The difference in clay mineral composition between two facies suggests that clay minerals within two facies originated from different sources. The diatom assemblage in LC42 include reworking indicator species (early-Pliocene and Miocene taxa), and the degree of reworking is severe in facies 1 compared to facies 2. The tendency of reworking is evident in the lower part of the boundary between 2.8 and 3.25 mbsf. This result suggest that there was a significant shift in the oceanographic regime in this region around 0.3 Ma.

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