



## **Mesozoic Sequence Magnetic Anomalies in the South of Conrad Rise, the Southern Indian Ocean**

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The Southern Indian Ocean is key area for understanding the fragmentation process of the Gondwana. However, tectonic history in the Southern Indian Ocean still remains less well-defined because of the sparse observations in this area. The R/V Hakuho-maru cruise KH-07-4 Leg3 were conducted to understand the tectonic history related to the Gondwana breakup in the Southern Indian Ocean between Cape Town, South Africa, and off Lutzow-Holm Bay, Antarctica. Total intensity and vector geomagnetic field measurements as well as swath bathymetry mapping were collected during the cruise. Magnetic anomaly data have been collected along WNW-ESE trending inferred from satellite gravity anomalies just to the south of Conrad Rise. We have also collected magnetic anomaly data along NNE-SSW trending lineaments from satellite gravity anomaly data between the south of the Conrad Rise and off Lutzow-Holm Bay.

Magnetic anomalies with amplitude of about 500 nT, originating from normal and reversed magnetization of oceanic crust are detected along the WNW-ESE trending structures just to the south of Conrad Rise. Those magnetic anomalies most likely indicate Mesozoic magnetic anomaly sequence, Mesozoic sequence magnetic anomalies with amplitude of about 300 nT are also observed along the NNE-SSW trending lineaments between the south of the Conrad Rise and off Lutzow-Holm Bay. Oceanic crusts formed during Cretaceous normal polarity superchron are found in both profiles, although magnetic anomaly C34 has been identified just to the north of the Conrad Rise. These suggest the extinct spreading axes in the south of Conrad Rise and the two different seafloor spreading systems were active around Cretaceous normal polarity superchron between the south of the Conrad Rise and off Lutzow-Holm Bay. These provide new constraints for the fragmentation process of the Gondwana.