

## Magnetic anomalies and magnetization intensity around the Rodriguez Triple Junction, Indian Ocean

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Central Indian, Southeast Indian, and Southwest Indian ridges form a triple junction, Rodriguez Triple Junction (RTJ), near 25°30'S and 70°E in the southern Indian Ocean. Several studies (e.g., Honsho et al., 1996; Mendel et al., 2000; Okino et al., 2015) studied the tectonic history of the RTJ based on bathymetric and magnetic data. However, they didn't sufficiently treat the temporal and spatial variation in magnetization intensity around RTJ and the crustal magnetization around the Kairei and Edmond hydrothermal fields on the Central Indian Ridge around the RTJ. In this study, we examined the temporal and spatial variation in magnetization intensity with the available multibeam bathymetric and magnetic data.

We compiled the multibeam bathymetric and magnetic data obtained by Japanese, Germany, French and American vessels. We calculated magnetic anomalies using the CM4 (Sabaka et al., 2004) model as a geomagnetic reference field. We minimized crossover errors of magnetic anomaly data adopted by the levelling method proposed by Ishihara (2015). We carried out the three-dimensional inversion of the magnetic anomaly data using Fourier transform method by Macdonald et al. (1980) to obtain magnetization intensity.

Our map of magnetization intensity shows a distinct pattern of magnetic reversals over our study area. The high magnetization intensity is well developed over the Central and Southeastern Indian ridges. The high magnetization intensity is observed along the traces of non-transform discontinuities. We found a decrease in magnetization intensity away from the ridge axis. The magnetization intensity around the Kairei and Edmond hydrothermal fields is several A/m, which is smaller than that of the surrounding areas. In some places, we found negative magnetization intensity of the seafloor formed during an interval of normal polarity.