**R004-17**
**D 会場 ： 11/26　PM2（14:50-16:20）**
**15:35〜15:50:00**

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# Rock magnetic study of dredged rock samples from Marie Celeste Transform Fault, Central Indian Ridge

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The rock magnetic architecture of oceanic crust remains poorly constrained, and existing models of crustal magnetization are still incomplete. Beyond the influence of seafloor spreading rate, results from deep-sea drilling have revealed significant lithological variability, yet the heterogeneous structures produced by hydrothermal alteration are not well enough understood to be incorporated into magnetization models (e.g., Tivey and Dyment, 2010; Fujii et al., 2018). Moreover, the development of detachment faults has led to shallow exposure of serpentinites, a component often overlooked in crustal frameworks (e.g., Oufi et al., 2002; Fujii et al., 2016). In this study, we report on a rare case of dredged rock samples obtained from a transform fault setting, the Marie Celeste Transform Fault of the Central Indian Ridge, to highlight their magnetic and lithological characteristics.

During the KH-24-6 cruise (October 12 to November 8, 2024), twenty-seven dredge hauls were conducted along the Marie Celeste Transform Fault, yielding a diverse sample set of basalt, dolerite, gabbro, and their altered equivalents. To facilitate laboratory analyses, we employed a newly adapted onboard mini-core drilling system to prepare cylindrical subsamples of 18 mm and 25 mm diameter from the dredged rocks. This approach provided standardized specimens for rock magnetic measurements and petrological comparison.

Preliminary results reveal clear lithological contrasts in magnetic properties. Basalts show strong remanent magnetization (˜several to 20 A/m), whereas altered basalts generally exhibit weak remanence ($<$1 A/m) with variable intensity. Dolerites possess measurable magnetic susceptibility and titanomagnetite content but contribute little to remanence, with dolerites containing veins showing greater variability. Gabbros display a wide range of values, with a positive correlation between susceptibility and remanence, reflecting coarse titanomagnetite grains; serpentinization of olivine is limited. Olivine gabbros with leucocratic veins show heterogeneity in both susceptibility and remanence. Notably, although samples were collected widely from the ridge axis to the off-axis flanks, the Curie temperature of basalts showed little variation, consistently ranging between 500 and 550 ° C. This observation indicates that the Fe/Ti ratio remained stable over long timescales, suggesting little spatial variability in the magma source. These findings highlight the magnetic complexity of transform-fault lithologies and provide new constraints for models of oceanic crustal architecture.