

南部マリアナ背弧拡大軸における海洋底玄武岩の自然残留磁化

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Natural remanent magnetizations of oceanic basalts on the back-arc spreading axis in the southern Mariana

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Magnetic anomaly high on a spreading axis has been a well-known character of the magnetic anomalies in the ocean, which is mainly related to magnetization intensity reduction with age due to low-temperature oxidation of titanomagnetite. Recently, a few deep-sea magnetic observations on the fast spreading axis showed that magnetization of the oceanic crust reflects relative paleointensity variation of the Brunhes Chron. These data suggest that the magnetization of oceanic basalt appears to reflect the geomagnetic intensity variation (i.e. the original thermoremanent magnetization (TRM) intensity variation) in spite of the alteration process (low-temperature oxidation of titanomagnetite). Previous studies discussed magnetization of oceanic crust on the basis of the natural remanent magnetization (NRM) itself. Therefore they cannot precisely estimate the alteration effect on magnetizations. In this study, we have reported demagnetization results of NRM, anhysteretic remanent magnetization (ARM), and saturation isothermal remanent magnetization (SIRM) for the oceanic basalts on the back-arc spreading axis in the southern Mariana and discuss fundamental properties of magnetization of oceanic basalt.