

## Paleomagnetism of sediment cores taken from the Ontong-Java plateau: for better understanding of the role of biogenic magnetite in geomagnetic paleointensity recording

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We studied sediment cores taken from the Ontong-Java plateau and managed to extract the geomagnetic paleointensity signal from them. Relative paleointensity (RPI) variations are widely used to understand geomagnetic field behavior and to develop age models for sedimentary sequences. Biogenic and detrital magnetic components are considered as the two major components, but for RPI estimations it is conventionally assumed that these two contribute to the remanent magnetization acquisition in an identical manner. However our RPI estimation shows some intriguing results. Normalizations of NRM with different artificial remanent magnetizations yielded inconsistent results; NRM-ARM demagnetization slope plots show curvature whereas NRM-IRM slope plots show a linear relation. It can be interpreted as the coercivity distributions of NRM and ARM are different. Moreover, relative paleointensity normalized by ARM shows artificial downcore decreases, and this may correlate with the variations of the ARM/SIRM ratio, which suggests the increasing proportion of biogenic to detrital magnetite. Then considering that biogenic magnetites have SD particle sizes with higher coercivity, the way biogenic magnetic components contribute to the remanent magnetization acquisition may be different from the way detrital components do. So the varying proportion of biogenic components may have considerable influence on the RPI signal recording in the sediments. The purpose of our research is trying to figure out the mechanism how magnetic minerals derived from different sources contribute to the remanent magnetizations of sediments. Then, it is expected that influences on the relative paleointensity records brought by different proportions between biogenic and detrital components in the sediments are able to be known.

Keywords: Geomagnetic paleointensity, Biogenic magnetite, Ontong-Java plateau