

火山岩データによる相対古地磁気強度変動曲線の絶対値較正 Calibration of relative paleointensity variation to absolute value using paleointensity data from volcanic rocks

望月 伸竜^{1*}, 丸内 亮², 山本 裕二³, 渋谷 秀敏²

MOCHIZUKI, Nobutatsu^{1*}, MARUUCHI, Toru², YAMAMOTO, Yuhji³, SHIBUYA, Hidetoshi²

¹ 熊本大学大学院先端機構, ² 熊本大学大学院自然科学研究科, ³ 高知大学海洋コア総合研究センター

¹Priority Org. for Innovation and Excellence, Kumamoto University, ²Department of Earth and Environmental Sciences, Kumamoto University, ³Kochi Core Center, Kochi University

We made a direct comparison between absolute paleointensities obtained from welded tuffs of pyroclastic flows and relative paleointensities (RPIs) from sedimentary records. Widespread tephras extruding with the welded tuffs were identified in sediments and dated in the oxygen isotope stratigraphy. Referring to the age estimates of the tephras in the oxygen isotope stratigraphy, the absolute paleointensities can be compared with RPIs of sedimentary records. For two RPI stack records reported from different oceans, we find that RPIs has a linear correlation to absolute paleointensities. On the basis of the correlations, the RPI variations were calibrated to geomagnetic field strengths (virtual axial dipole moments: VADM_s). The two calibrated records show an almost consistent VADM variation. The consistency indicates that this new calibration procedure is successful and it can be applicable to RPI records on the Earth.

キーワード: 相対古地磁気強度, 絶対古地磁気強度, 溶結凝灰岩, テフラ, キャリブレーション, LTD-DHT ショー法
Keywords: relative paleointensity, absolute paleointensity, welded tuff, tephra, calibration, LTD-DHT Shaw method