

The archaeomagnetic field recorded in ancient kiln walls in Si Sisatchanalai, Sukhothai

Archaeological dating is crucial in archaeology as it is a key to understand human history. However, traditional dating methods used by archaeologists such as potassium-argon dating and luminescence dating can provide ambiguous age results, e.g., noise disturbance or argon loss during the dating return young apparent ages. Therefore, I plan to establish an archaeomagnetic secular variation (ASV) curve to resolve this problem and use the ASV curve as an alternative tool to date archaeological artefacts. However, archaeomagnetic data in Thailand are absent from literature. Therefore, the ASV curve cannot be constructed from the archaeomagnetic data for this locality. To provide archaeomagnetic data to construct the ASV curve, I measured directions of the Earth's magnetic field recorded in kiln walls from Ban Ko Noi (KN123, age $1,370 \pm 100$ A.D.), Si Satchanalai. The mean declination and inclination of 49.6° and 32.6° with 95% confidence limit of 5.4° were determined from 10 samples from kiln KN123. Mean directions from this study were also compared with the directions of the Earth's magnetic field in Thailand during 1,370 A.D. generated by the global archaeomagnetic field model ARCH3k.1. Declination and inclination from this study show significant departure from the field predicted by the ARCH3k.1 model.

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