



New directional results and determination of absolute archaeointensity using both the classical Thellier and the multi-specimen procedures for two kilns excavated at Osterietta, Italy

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A detailed rock-magnetic and archaeomagnetic study has been carried out on two rescue excavation kilns discovered during the works to expand a highway at the location of Osterietta, in Northern Italy. Systematic archaeomagnetic sampling was carried out collecting 15 samples from the first kiln (OSA) and 8 samples from the second kiln (OSB), all of them oriented in situ with a magnetic compass and an inclinometer. Magnetic mineralogy measurements have been carried out in order to determine the main magnetic carrier of the samples and to check their thermal stability. Standard thermal demagnetization procedures have been used to determine the archaeomagnetic direction registered by the bricks during their last firing. Demagnetization results show a very stable characteristic remanent magnetization (ChRM). We averaged the directions for each kiln separately and calculated the statistical parameters assuming a Fisherian distribution. The archaeointensity of both kilns has also been recovered with both the classical Thellier-Thellier method and the multi-specimen procedure (MSP-DSC). During the Thellier experiments, regular partial thermoremanent magnetization checks have been performed and the effect of the anisotropy of the thermoremanent magnetization (TRM) and cooling rate upon TRM intensity acquisition have been investigated in all samples. The multi-specimen procedure was performed with a very fast-heating oven developed at Montpellier (France). The intensity results obtained from both methods have been compared and the full geomagnetic field vector determined for each kiln has been used for archaeomagnetic dating. The obtained results show that the kilns were almost contemporaneous and their last use occurred in the 1750-1850 AD time interval.