

NEW ARCHEOINTENSITY RESULTS ON A BAKED-CLAY TILES COLLECTION FROM NEW JERUSALEM MONASTERY

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Abstract. We report on new archeointensity results from two groups of baked-clay tiles sampled in New Jerusalem Monastery, Moscow region (Russia). These groups of fragments are precisely dated of respectively 1680-1690 AD (NJ01) and 1710-1720 AD (NJ02). All archeointensity measurements were carried out using the experimental protocol developed for the Triaxe magnetometer, which allows magnetization measurements directly at high temperatures. Mean intensity values derived at the group level are obtained from 5 (NJ01) and 4 (NJ02) different fragments. We analyzed 4 to 7 specimens per fragment using two cooling rates (25°C/minute and 2°C/minute) for laboratory thermoremanent magnetization acquisition. We show that the cooling rate effect is statistically insignificant in our intensity determinations. Implications of these data are twofold. First, they do not argue for a regular decrease of the dipole field moment over the past four centuries. Second, they appear in relatively good agreement with the field intensity variations observed in Western Europe, suggesting the absence of a significant non-dipole field effect over Europe. However, further development of archeomagnetic study in the European part of Russia is necessary to confirm these preliminary conclusion.

Keywords: archeomagnetism, archeointensity, secular variation, dipole, Europe.

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