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## Reuse of medieval bricks as important limitation for construction of geomagnetic secular variation curves based on archeomagnetic studies of brick buildings in Poland.

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The bricks can be one of the best material for archeomagnetic studies. Their backing technique (i.e. horizontal location in the furnace) allow to determine also the value of inclination of geomagnetic field. However, reuse of older bricks for the construction of newer objects can limit the utility of this material in archeomagnetic studies. A set of the brick samples from 26 historical buildings in SE Poland was taken for archeomagnetic investigations. As a result of this study, the secular variations of palaeointensity and inclination of the geomagnetic field from 1200 to 1800 AD were defined for this part of Poland. The paleointensity of geomagnetic field was determined using the IZZI-Thellier-Thellier protocol. The course of the new regional palaeosecular curves is approximately the same as so far obtained in other parts of Europe. Data obtained from four brick buildings, however, do not fit substantially to the reference European curves. The remarkable difference is a rapid and deeper drop of inclination and significantly higher than expected values of palaeointensity. These features indicate that bricks used for the construction of these buildings (dated on XVI – XVII centuries) were taken from older brick constructions, most probably from the Gothic time (XIII/XIV c.). We compared our data with the earlier data obtained from brick buildings in N Poland. The regional archeomagnetic curves calculated for these two regions of Poland are completely different in their segments as old as the first half of the 18<sup>th</sup> century. This fact could be explained by the reuse of medieval bricks during the construction of studied objects from N Poland (dated on the first half of the 18<sup>th</sup> century) and applied for the construction of reference curve or by later secondary heating of original bricks.

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