



## **Improving the geomagnetic field modeling with a selection of high-quality archaeointensity data**

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Geomagnetic field reconstructions for the last millennia are based on archeomagnetic data. However, the scatter of the archaeointensity data is very puzzling and clearly suggests that some of the intensity data might not be reliable. In this work we apply different selection criteria to the European and Western Asian archaeointensity data covering the last three millennia in order to investigate if the data selection affects geomagnetic field models results. Thanks to the recently developed archeomagnetic databases, new valuable information related to the methodology used to determine the archeointensity data is now available. We therefore used this information to rank the archaeointensity data in four quality categories depending on the methodology used during the laboratory treatment of the samples and on the number of specimens retained to calculate the mean intensities. Results show how the intensity geomagnetic field component given by the regional models hardly depends on the selected quality data used. When all the available data are used a different behavior of the geomagnetic field is observed in Western and Eastern Europe. However, when the regional model is obtained from a selection of high-quality intensity data the same features are observed at the European scale.