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Geomagnetic field intensity variations in Western Europe over the past eight hundred years

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We obtained new archeointensity data for Western Europe (France and Belgium) from 17 groups of pottery and pavement brick fragments dated, for some of them within a year, between the thirteen and the nineteen century AD. Analyses were carried out using the IZZI version of the classical Thellier and Thellier method and the new Triaxe procedure involving high-temperature magnetization measurements. Anisotropy and cooling rate effects were taken into account in both protocols and strict selection criteria were considered to keep only the most reliable data. Good agreement is observed after performing both methodologies on the same group of fragments. Moreover, sites of similar age yield very coherent results which strengthens the reliability of our data and therefore of the observed fluctuations. Together with previous results, our new data allow a precise and detailed description of the intensity variations in Western Europe over the past 800 years. These fluctuations are marked by two intensity maxima in the fourteen century and at the end of the Renaissance period (i.e. around 1600) followed by a large and rapid decrease in intensity until around 1800.