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# The Earth's magnetic field in Italy during the Neolithic period: New data from the Early Neolithic site of Portonovo (Marche, Italy)

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## Résumé

We present the results of an archaeomagnetic study on three Neolithic ovens discovered at the archaeological site of Portonovo (Marche, Italy). The discovered ovens are a rare example of very well preserved domed ovens from the Early Neolithic period and are dated based on archaeological information and radiocarbon dating. Standard thermal demagnetization procedures were used to determine the archaeomagnetic direction registered by each oven during its last firing and their archaeointensity was determined with the multi-specimen procedure (MSP-DSC). Both directional and intensity results are of high quality and they clearly show an intensity low during the Neolithic period. The new results are the first full geomagnetic field vector data for this period in Italy. They are compared with other contemporaneous data from Europe and with global geomagnetic field models. Independent archaeomagnetic dating of the three ovens has been also performed using the SCHA.DIF.7k model. The obtained results are in excellent agreement with the radiocarbon dates and confirm that all ovens belong to the Neolithic period and were almost contemporaneously used. The new results importantly enrich our knowledge of the geomagnetic field during the Neolithic period that is poorly covered by data, not only in Italy but in the whole Europe and show that archaeomagnetic dating can provide very precise results even for prehistoric periods.

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