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Posterior archaeomagnetic dating for the early Medieval site Thunau am Kamp, Austria

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The early medieval site Thunau am Kamp consists of a hill fort and a settlement with large burial ground at the bank of river Kamp. All these features are under archaeological investigation since many years. The settlement comprises many pit houses, some with stratigraphic order. Every pit house was equipped with at least one cupola oven and/or a hearth or fireplace. Sometimes the entire cupola was preserved. The site was occupied during the 9th and 10th AD according to potshards which seem to indicate two phases: In the older phase ovens were placed in the corner of the houses while during the younger phase they are found in the middle of the wall. In order to increase the archaeomagnetic data base 14 ovens have been sampled. They fill the temporal gap in the data base for Austria around 900 AD. Laboratory treatment included alternation field and thermal demagnetisations as well as rock magnetic experiments. The baked clay with was formed from a loess sediment has preserved stable directions. Apart from one exception the mean characteristic remanent magnetization directions are concentrated around 900 AD on the early medieval part of the directional archaeomagnetic reference curve of Austria (Schnepp & Lanos, GJI, 2006). Using this curve archaeomagnetic dating with RenDate provides ages between 800 and 1100 AD which are in agreement with archaeological dating. In one case archaeomagnetic dating is even more precise. Together with the archaeological age estimates and stratigraphic information the new data have been included into the database of the Austrian curve. It has been recalculated using a new version of RenCurve. The new data confine the curve and its error band considerably in the time interval 800 to 1100 AD. The curve calibration process also provides a probability density distribution for each structure which allows for posterior dating. This refines temporal errors considerably. Usefulness of such an approach and archaeological implications will be discussed.