



Using statistical correlation to compare geomagnetic data sets

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The major features of data curves are often matched, to a first order, by bump and wiggle matching to arrive at an offset between data sets. This poster describes a simple statistical correlation program that has proved useful during this stage by determining the optimal correlation between geomagnetic curves using a variety of fixed and floating windows. Its utility is suggested by the fact that it is simple to run, yet generates meaningful data comparisons, often when data noise precludes the obvious matching of curve features.

Data sets can be scaled, smoothed, normalised and standardised, before all possible correlations are carried out between selected overlapping portions of each curve. Best-fit offset curves can then be displayed graphically. The program was used to cross-correlate directional and palaeointensity data from Holocene lake sediments (Stanton et al., submitted) and Holocene lava flows. Some example curve matches are shown, including some that illustrate the potential of this technique when examining particularly sparse data sets.

Stanton, T., Snowball, I., Zillén, L. and Wastegård, S., submitted. Detecting potential errors in varve chronology and ^{14}C ages using palaeosecular variation curves, lead pollution history and statistical correlation. *Quaternary Geochronology*.