



## **How useful is the global palaeointensity record for assessing Earth's geodynamic evolution?: An evaluation of the existence, extent and significance of putative long-term features in the dipole moment record.**

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Absolute palaeointensity (dipole field strength) is known to be fundamentally linked to core-mantle heat flux, core evolution and global geodynamics and, therefore, palaeointensity measurements from well-dated rocks throughout the geological record are an important quantifiable signature of deep Earth processes. For this reason, and because of the link between field strength and geodynamo processes, much recent attention has been given to determinations of absolute palaeointensity from rocks formed throughout the geological record. Important methodological advances, including new techniques and approaches for palaeointensity determination and more rigorous sample quality and acceptance criteria, have resulted in significant recent enhancement of the IAGA global palaeointensity database. Despite this data enhancement, several key gaps remain and, consequently, there is considerable debate and uncertainty over the significance of several putative features in the long-term record. The record has been analysed, statistically, by several authors with differing outcomes resulting in some disagreement over the extent to which the global record can be used to address geodynamic issues. In this presentation, the current and emerging evidence concerning the existence and extent of the putative long-term features in the record are evaluated. Also, future targets for palaeointensity research are proposed in order to maximize the potential of using the global palaeointensity record to address geodynamic issues.