



Paleointensity of Proterozoic magmatic rocks from South America

Anita Di Chiara (1), Adrian Muxworthy (2), and Ricardo Trindade (3)

(1) Plymouth University, SOGEES, Plymouth, UK, (2) Imperial College of London, UK, (3) University of Sao Paulo, IAG, Sao Paulo, Brazil

Few data are available yet to constrain the geomagnetic field palaeointensity pattern during the Precambrian in South America, due to the lack of suitable methods and materials. We report here results from a preliminary study to determine the palaeointensity of 1419 Ma rocks from Nova Guarita mafic dykes from central Amazonian Craton and 1790 Ma mafic sills from the Avanavero sills in northern Amazonian Craton. We initially tried to conduct a Thellier-type palaeointensity determination, with units returning no palaeointensity records. The reason for failure was attributed to chemical alteration and a large multidomain component of the remanence. In order to reduce the MD effect we conducted LTD-Thellier experiment with an higher success rate. Given the instability of some samples to heating, we employed for the first time on Precambrian rocks the non-heating Preisach palaeointensity protocol, and we have been able to recover palaeointensities from units that were unstable to heating. We report our findings here, discussed in the contest of the debate about the inner core nucleation timing.