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Earth's magnetic field strength in the Early Cambrian: Thellier paleointensity estimates of Itabaiana mafic dykes, Northeast Brazil

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Thellier's paleointensity and microwave paleointensity experiments were carried out in Early Cambrian dykes from Itabaiana (NE Brazil) dated at 525 $\pm$5 Ma. A previous paleomagnetic study on these dykes reveals a very stable characteristic component, whose thermoremanent nature is confirmed by positive baked contact tests performed in three different dykes. The main magnetic carrier is Ti-poor to pure magnetite in the PSD to SD domain state. Hysteresis parameters and first-order reversal curve (FORC) diagrams will be presented in order to apprehend the two different behaviors that characterize the samples during paleointensity experiments. From the 96 samples (from 13 dykes) analyzed in two laboratories using slightly different Thellier's experimental protocols, we have retained 12 samples (3 dykes) for paleointensity estimates. Paleointensity values range from 18.1 up to 40 μ. This corresponds to equivalent VDMs of 4.3 $\pm$ 0.5, 4.4 $\pm$ 1.4 and 5.3 $\pm$ 0.9 x 1022 Am2, for the three dykes respectively. These results, the first obtained for rapidly cooled Cambrian rocks, document a moderate Earth field in the Precambrian-Cambrian transition.