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Intensity of the Earth's Magnetic Field over the past 6 million years ; A case study from Basaltic Rocks in East Anatolian

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The aim of this study was to determine the intensity variation of the earth magnetic field by using Miocene and Quaternary basaltic rocks in Eastern Anatolian region. A total of ninety one volcanic rocks at twelve different sites are sampled around the Van region. A modified Thellier method was used to determine paleointensity values. Paleointensity results from five sites were accepted according to our confidence criteria.

The paleointensity values from the five reliable sites with normal polarity show relatively low paleointensity values compared to the present field of 47 μT. The total paleointensity field values F are 33.96$\pm$ 3.54 μT for site VAN5 with an age of 5.5 m.y, 19.98$\pm$ 6.79 μT for site VAN7 with an age of 4.3 m.y, 26.07 $\pm$8.41 μT for site VAN8 with an age of 0.1 m.y, 29.98 $\pm$1.71 μT for site VAN11 with an age of 0.4 m.y and 31.08 $\pm$2.88 μT for site VAN12 with an age of 5.5 m.y. The average VDMs (Virtual Dipol Moments) correspond to 6.01x10^{22} Am^2 for the three Miocene sites and to 5.73x10^{22} Am^2 for the Quaternary rocks. Our data is in good coherence to previous studies of similar age ranges.