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Anisotropy of Magnetic Susceptibility Studies in Lava Flows of the Eastern Anatolia Region, Turkey

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Eastern Anatolia comprises one of the high plateaus of the Alpine-Himalaya mountain belt with an average elevation of ∼2 km above the sea level. Available geochronologic data indicate that the volcanism started in the south of the region around the north of Lake Van and continued towards the norths in a age interval of 15.0 Ma to 0.4 Ma. The products are exposed as stratovolcanoes like Agri, Tendurek, Suphan and Girekol with the eruption of andesitic to rhyolitic lavas, ignimbrites and basaltic lava flows.

In this study, anisotropy of magnetic susceptibility measurements were carried out on different lava flows (Tendurek, Girekol and Suphan) to determine the flow direction of lavas. It has been shown that the direction of maximum susceptibility is associated with magma flow direction in the vertical direction, while a horizontal flow direction is predicted for the volcano structure of Suphan. Anisotropy of magnetic measurements show a trend of lineation towards the center of the projection and shallow-dipping foliations which are largely scattered.