



## **Anisotropy of magnetic susceptibility of the Permian-Triassic intrusions from the Norilsk region and Angara-Taseeva depression (Siberian Traps LIP): two patterns of the magma transport**

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We present the results of the detailed investigation of anisotropy of magnetic susceptibility (AMS) in the intrusions from the Norilsk region and Angara-Taseeva depression (the Siberian platform). The studied regions are the parts of the huge Siberian Traps Large Igneous Province. We analyzed the magnetic lineation in the gabbro and dolerite sills in these areas and revealed the main directions of the magma flow and the location of the feeding zones.

In the Angara-Taseeva depression the normal type of magnetic fabric (N-type) is predominant in the central part of the area. Large Tulunskiy, Padunskiy and Nizhneudinskiy sills demonstrate different patterns of the magma flow directions. Moreover, in different sills the directions of the maximal axes K1 of AMS ellipsoid converge to the local centers. Generally, our results are consistent with the model of the magma feeding zone location in the most subsided zone. In the periphery of the depression the inverse magnetic fabric is predominant, and in sites with N-type the orientation of K1 axes shows the essential differences even in closely located objects. We explain this fact by the absence of the general direction on magma flow in the subsurface conditions of emplacement.

We also measured the anisotropy of magnetic susceptibility in the intrusions from the Norilsk town and the Kulumbe river valley (the Northwestern Siberian platform). About 50% of the studied intrusions demonstrate the N-type of magnetic fabric and are suitable for the magma flow reconstruction. The NW – SE magnetic lineation is the most common both in Norilsk and Kulumbe regions. We suggest that during the emplacement magma moved from the regional faults of the NE strike, namely Norilsk-Kharaelakh and Imangda-Letninskiy fault zones.

Thus, we revealed two contrasting patterns of the magma transport during the Siberian Traps intrusions emplacement. The Norilsk and Kulumbe areas are located above the ancient Norilsk-Igarka paleorift zone, and the magma flow in these regions was controlled by the long-lived regional faults system. On the contrary, the Angara-Taseeva depression was a basin of sedimentation in the Late Paleozoic before the Siberian Traps magmatic activity. In this region, the lateral magma transport through the system of sills was predominant. Hence, the pattern of the Siberia Traps emplacement is determined by the tectonic structure in the studied regions.

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