Paleomagnetism and magnetostratigraphy of traps of the Maymecha river valley, the Siberian large igneous province (preliminary results)

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Within the Maymecha-Kotuy area the most representative and complete cross-sections of traps of the northern field of the Siberian flood basalt province are located. According the existing point of view the origination of volcanic rocks of this area is spread on the almost all time interval from the beginning to the end of the Siberian trap magmatism. Therefore the main task of our paleomagnetic studies in the Maymecha-Kotuy area is the obtaining of reliable magnetostratigraphic scheme and its using for estimation of the volume and intensity of trap eruptions, which can help us to understand the level of the trap magmatism impact on the environment.

The most complete and accessible cross-sections of traps Maymecha-Kotuy area located along the Maymecha river valley, where the follow formations are exposed (bottom-up): Pravoboyarsky (alkaline tuffs), Tyvankitsky (tholeiitic basalts), Delkansky (alkaline basalts) and Maymechinsky (meymechites). According to modern estimates (Fedorenko et al., 2000) the total thickness of this trap sequence is 4 km. During the reconnaissance works in the summer of 2009, we have selected representative paleomagnetic collection of all mentioned volcanic formations. Wherever possible, samples were selected and for magnetostratigraphic studies (flow-by-flow).

In this report we present paleomagnetic and geological data obtained during these studies. Presented data are important for understanding the evolution of the Siberian trap magmatism. Also we present the magnetostratigraphic scheme of the Maymecha river traps section; for all formations paleomagnetic directions and paleomagnetic poles are calculated. In addition for the proofing of the primary magnetization of studied rocks the magnetomineralogical analyses were carried out. The obtained results allow us to identify the most promising sites and objects for the detailed paleomagnetic studies in the next year.