

SECULAR VARIATIONS OF THE GEOMAGNETIC FIELD AT THE PERMO-TRIASSIC
BOUNDARY AND TIME CONSTRAINTS ON INTENSITY OF MAGMATIC AND
VOLCANIC ACTIVITY DURING THE FORMATION OF THE SOUTH SIBERIAN TRAPS

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Study of changes in geomagnetic secular variations through geological time is essential to document the Earth's magnetic field evolution and provides an important constraint for geodynamo modeling. Moreover, knowledge of the secular variations value for any specific geological epoch (paleosecular variations - PSV) may give an additional tool to constrain the duration of emplacement and cooling of various magmatic bodies including flows, dykes and sills. In this report we present the result of study of the PSV at the Permo-Triassic boundary (~252 Ma), based on the paleomagnetic data, obtained from numerous (N>100) volcanic flows of the Siberian traps exposed in series of sections located in Norilsk and Maymecha-Kotuy regions in the North-West and North of the Siberian platform. Our data, taken together with similar data from other regions (Sementau, East Kazakhstan; Emeichan, China) indicates that the amplitude of PSV at the Permo-Triassic boundary was about the same or a little lower than in Late Cenozoic during last 5 millions years. The low (comparing with expected one) value of PSV recorded in several large sills from Angara-Bratsk region indicates that these sills was formed very fast during the time interval less than, at least, several thousand years. Especially this conclusion is interesting for so called Tolstomyss sill, which, in fact, represents a huge field of associated tuffs, sills, dykes and volcanics, extended over the distance more than 200 km. This result can be considered as a further indication of very fast emplacement of the Siberian traps and their link with the Permo-Triassic catastrophe. This study was supported by Programm #7 of Departement of Earth Science of RAS and by RFBR grants # 13-05-12030, 13-05-00235.