GC2024-PERM042

Paleomagnetic data of Jurassic igneous rocks of the Greater Caucasus: comparison with Lesser Caucasus

Ivan Fedyukin[1] , Andrey Shatsillo[1] , Tatyana Romanyuk[2,1] , Irina Latysheva[2] , Anastasia Novikova[2] , Nikolay Kuznetsov[2]

[1] O.Yu. Schmidt Institute of Physics of the Earth, Russian Academy of Sciences
[2] Geological Institute of the Russian Academy of Sciences

ivan_f88@mail.ru

Paleomagnetic studies of Jurassic igneous rocks selected from undeformed rocks of the northern slope of the Greater Caucasus show primary bipolar magnetization, which differs from modern trends. The calculated paleomagnetic pole indicates a high convergence with the APWP of boudary Lower and Middle Jurassic for the European Platform [1].

In the Jurassic period, the Scythian and European plates were in a single rigid block. Comparison with Jurassic volcanic rocks of the Lesser Caucasus, Transcaucasia and Pontides shows significant differences in paleomagnetic poles [2]. The data for the Lesser Caucasus and Transcaucasia differ by more than 20 degrees in paleolatitudes, which considered with north part of African craton [3]. The data on Pontides for the Jurassic period show similarities with the data obtained on the northern slope of the Greater Caucasus, but there is a significant difference in declination – more than 25 degrees [4].

With the help of Gplates software, the paleomagnetic poles of the Greater Caucasus, Lesser Caucasus and Transcaucasia were evaluated and a geodynamic picture of the closure of the Tethys Ocean was developed.

The work was carried out with the financial support of the RSF grant No. 23-27-00409.

References

[1] Besse, J., Courtillot, V. Journal of Geophysical Research 107 (2002) (B11)2300.

[2] Bazhenov, M. L., Burtman, V. S., Levashova, N. L. Earth and Planetary Science Letters 141 (1996) 79.

[3] Torsvik T.H., Muller R.D., Van der Voo R., Steinberger B., Gaina C. Reviews of Geophysics 46 (2008) RG3004.

[4] Meijers M. J. M., Smith B., Pastor-Galán D., Degenaar R., Sadradze N., Adamia S., et al. Geological Society Special Publications, 428 (2015) 117.