

Carbonatite magmatism over the last 500 Myr: geodynamic features

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Geodynamic position of the carbonatites is actively discussed question during the last decades. Some researches link their formation with ascend of the large volumes of mantle melts from the CMB. There is certain evidence for temporal and spatial correlation of the carbonatites and LIPs, whose origin is certainly related with mantle plumes [1], as it was shown for carbonatites of the Polar Siberia (Maymecha-Kotuy province) which were formed simultaneously with the Siberian superplume 250 Ma [2].

We used the recent absolute plate kinematic model [2] to reconstruct locations of Phanerozoic carbonatites at the time of their origin (Fig. 1). We have found that 118 out of 180 carbonatites (66%) are projecting onto central or peripheral parts of African Large Low Shear-wave Velocity Province and this can be viewed as an evidence for linking the carbonatites with mantle plumes.

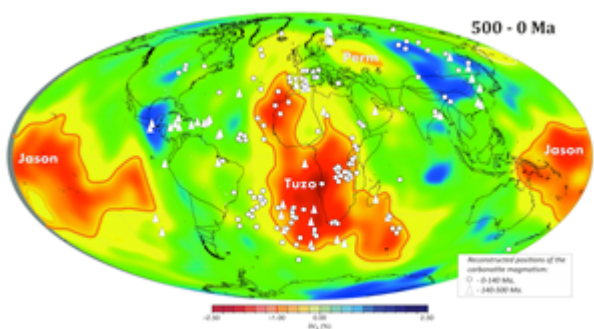


Figure 1. Reconstructed localities of the Phanerozoic carbonatites.

[1] Ernst R.E. Large Igneous Provinces. Cambridge University Press. 2014. 666 p

[2]. Kogarko L., Zartman R.(2007) *Min Petrol.***89**,113-132 [3] Torsvik T.H. *et al.* (2014) *Proceedings of the National Academy of Sciences of the United States.***111** ,8735-8740. Supported by RSCF grant 15-17-30019.