



Propagating pull-down effects of triangular paleoslab fragments at a convergent zone: magmatic evolution beneath Central Mongolia in the past 90 Ma

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Ophiolite belts, closed paleoceans, and high-speed fragments in the mantle of Central Mongolia are considered as a basis for interpretation of paleoslab and above-paleoslab geochemical signatures in basaltic liquids erupted in the past 90 Ma. It is suggested that spatial-temporal evolution of basaltic magmatism in this area was governed by a local pull-down mechanism affected triangular stagnated paleoslab fragments that were reactivated due to within-Asian accommodation of convergence between lithospheric plates. The Late Cretaceous processes were focused at the South Gobi paleoslab fragment. Its northwestern and southeastern corners were pulled-down due to interactions between the Kohistan arc and Southern Asia and the Philippine Sea plate and Southeastern Asia at about 91 and 76–71 Ma, respectively. The Cenozoic accommodation of the Indo-Asian convergence was expressed by pull-down effects at the southern corner of the Southern-Middle Gobi paleoslab fragment between 62–43 Ma, at the southeastern corner of the Hangay one since 32 Ma, and at the southwestern corner of the Hangay–Selenga one since 16 Ma. By similar mechanism, basaltic liquids were partly generated also in the Sayan–Khamar-Daban region of Southern Siberia between 28 and 20 Ma, but the further magmatic evolution of the area was dominated by the mantle instability at boundaries of blocks with different thickness of the lithosphere: the Siberian craton, the Tuva–Mongolian massif and adjacent Caledonides.