

TIMING OF THE QUATERNARY VOLCANISM IN THE BAIKAL AND OLEKMA-STANOVAYA MOBILE SYSTEMS: APPLICATION FOR GEODYNAMICS IN CENTRAL AND EAST ASIA

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The Baikal and the Olekma-Stanovaya mobile systems stretch west-east across the area of Central and East Asia in a distance of five thousands kilometers. According new K-Ar and ^{40}Ar - ^{39}Ar ages, volcanism took place at about 1.9, 1.4-1.3, 1.15-1.0.3, 0.72-0.68, 0.43-0.33 Myr and during the Holocene in the western Baikal system (East Tuva volcanic field), at 1.7-1.6, 1.2-0.79 and 0.6 Myr in its central part (Tunka-Dzhida and Vitim volcanic fields), and at 1.8-1.7, 0.64-0.38, 0.18 and during the Holocene at the junction of the Baikal and Olekma-Stanovaya systems (Udokan volcanic field). Farther to the east, volcanism occurred at 0.58-0.28 Myr in the central Olekma-Stanovaya system (Tokinsky Stanovik volcanic field). Timing of the East Tuva volcanism was apparently similar to relatively frequent volcanic events in the Central Asian mobile system (including Hangay and Tibet), probably, due to influence of the Indo-Asian collision. More episodic character of volcanism in the central Baikal system could reflect the specific crustal dynamics in conditions of dominated rifting. The only volcanic episode in the central Olekma-Stanovaya system seemed to be controlled by overlapping intraplate processes resulted from the Izu-Bonin-Honshu and North-American-Eurasian collision events. Respectively, several episodes at the mobile system junction were due to both collision and rifting. Various combinations of the collision- and rifting-derived intraplate processes appeared to be responsible for episodic Quaternary volcanic eruptions in other volcanic fields of East Asia. Grant of the Russian Science Foundation for Basic Research 98-05-64285.