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P-T conditions of the transformation of the sedimentary rocks during fold-thrust deformation in Chukotka and Wrangel Island

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Studied region is situated in Western Chukotka and Wrangel Island (Northeast Russia). Both regions belong to the Chukotka microcontinent, which consists of Neoproterozoic metamorphic basement and strongly deformed Paleozoic-Mesozoic cover. The main phase of north vergent deformation was associated with the collision of the Chukotka microcontinent with the structures of the active margin of Siberia at the end of Early Cretaceous
We use the association of newly formed minerals created at post-sedimentation transformations of Mesozoic deposits for understanding the conditions of collisional processes. Newly formed minerals (micas and chlorites) can serve as an indicator of P-T parameters for the formation of fold-thrust stuctures. To determine the P-T conditions of thrust deformations, we collected the sample from typical thrust sheet in various tectonic zones of Wrangel Islands and Chukotka (Kibera Cape, Malyi Anyui and Machvavaam Rivers).
Mica and chlorite were analyze from samples taken from thrusts established in the field by the method of structural geology. The samples were collected in the rocks below, above and in the zone of the thrust.
According to the crystal-chemical formulas of the analyzed minerals, the temperatures of their formation by geobarometers were recalculated. A rough estimate of the mean temperatures for chlorites indicates a gradual decrease in temperature from the Wrangel specimens of thrusts to the samples of the Chukchi Peninsula-that is, from north to south. The temperature decrease is approximately from 380 to 300 ° C. It is also establish that the temperature regime changes in the thrust zone. In the samples under the thrust show the maximum temperature and differs from the samples located above the thrust on average 20 ° C.
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