Tectonic structure and metallogeny of the Western Chukotka: insights from comprehensive geophysical dataset interpretation.

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Geological structure of western part of the Chukotka fold belt has been studied basing on the results of joint interpretation of geophysical data. The potential-field data, seismic and magnetotelluric data along two regional profile crossed the area and the off-shore seismic data obtained on the East Siberian sea were used in this study. The NE and NW oriented fault systems which control the mineragenous zones location were first detected and delineated. Joint interpretation of seismic and MT data along regional profiles allowed us to study: the deep structure of NW directed thrusts; the intrusion bodies morphology; the structural features of the Paleozoic and Mesozoic formations and the structure of volcanic deposits. The models of geological structure along regional profiles were used as a reference for potential field interpretation. Architecture of crystalline basement of the area was studied and several “steps” were detected. The depth of crystalline basement increases from north to south and reaches the largest depth under the volcanic deposits of Ochotsk-Chukotsk Volcanic Belt (OCVB).