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Local natural electric fields – the electrochemical factor of formation of placers and the criterion of prospectings of oil and gas deposits on the Arctic shelf

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On the basis litologo-facial, geo- and hydrochemical characteristics of a cross-section lito - and shelf hydrospheres, the estimation of structural features modern and paleostatic local electric fields and their influence on transportation of the suspended mineral material is made. The formula of dynamic carrying over of the ore material which is in a subcolloidal condition under the influence of natural electric field of a shelf is deduced.
On a structure of a friable cover and its features on G.I. Teodorovicha's method position of oxidation-reduction border, sign Eh was reconstructed. On the basis of the established dependence between Eh and local substatic electric field of a shelf it was reconstructed paleostatic a field and its influence on the weighed mineral particles was estimated. Influence of local electric field on lithodynamic moving of ore minerals is estimated for a shelf of the Arctic seas of Russia.
On the basis of this estimation and data on structure of a friable cover the map of influence of local electric field on sedimentation and transportation of ore minerals for water area of the East Arctic seas of Russia is constructed. For Laptev seas and East-Siberian the areas in which limits local electric field promoted are revealed and promotes formation Holocene placers of an ilmenite, a cassiterite and gold. For Chukchi and the Bering Seas such estimation is made for all friable cover.
hydrocarbonic deposits located on water area of the Arctic shelf of the Russian Federation, initiate occurrence of jet auras of dispersion of heavy metals in ground deposits and in a layer of the sea water, blocking these deposits. Intensity of auras and their spatial position is caused by a geological structure of deposits of breeds containing them, lithodynamic and oceanologic factors. On the basis of the theoretical representations developed by M.A.Holmjansky and O.F.Putikova (Holmjansky, Putikov, 2000, 2006, 2008) application of electrochemical updating of electroinvestigation for searches of sea hydrocarbonic deposits and specification of morphology of deposits is proved. On the basis of the offered theoretical representations, the specialised equipment "IOL-UV" which has passed metrological tests is developed. The applied technology allows to divide types of deposits on gas or oil. Search works are spent by a method of towage of the underwater module of a complex behind a stern of a bearing vessel. The performed works have shown high efficiency of the used technique and the created sea search complex. The conducted researches have allowed to specify contours of deposits. The geochemical analysis of tests of water and ground deposits has specified the nature of deposits.