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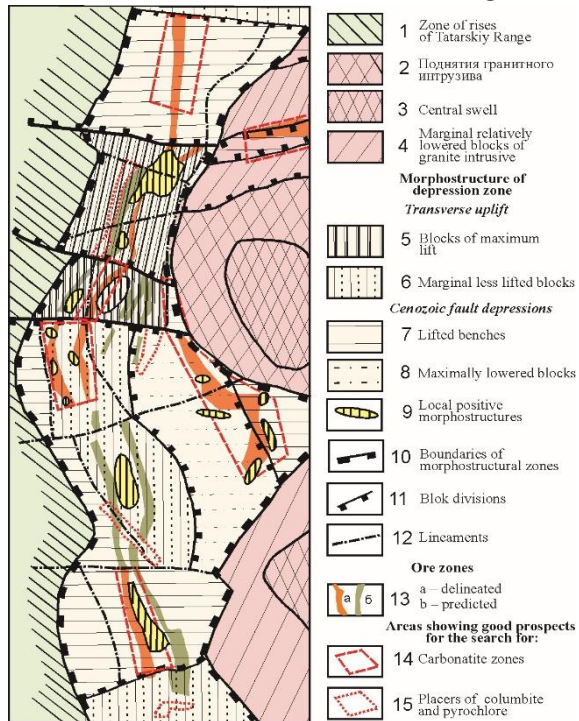
Structural and geomorphological criteria for localizing hidden deposits of rare-metal weathering crusts of diamond and kimberlite pipes

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On the basis of integration of morphostructural and geochemical research (in scale 1:25 000), criteria were elaborated for locating rare metal bearing weathering crusts of carbonatite (Enisei range). Hypsometric zoning of ores, ratios of ore association elements in vertical direction, the influence of surface morphogenetic features on the composition and structure of secondary haloes and dispersion trains were established. 3D structural geochemical model reflects the character of distribution of ore

elements and indicator-elements in ore body and its haloes in the weathering crust. On the basis of obtained data areas are delineated that show good prospects for finding new ore bodies (Figure 1).



For Malo-Botuobinskaya (A) and Nakynskaya (B) diamond-bearing areas (Yakutia) structural geomorphologic charts (in scale 1:1 000 000 – 1:25 000) were compiled. Criteria for localizing diamond bearing pipes were elaborated. The inherited character was established of dislocations with a break of continuity, surface morphologies, buried basement and modern relief. With the use of revealed structural features of basement and modern surface determined by the use of diamond-bearing bodies, three areas were predicted and delineated for conducting prospecting work for diamonds (Figure 2).

Figure1: Chart of morphological and structural zoning of ore body with elements of prediction

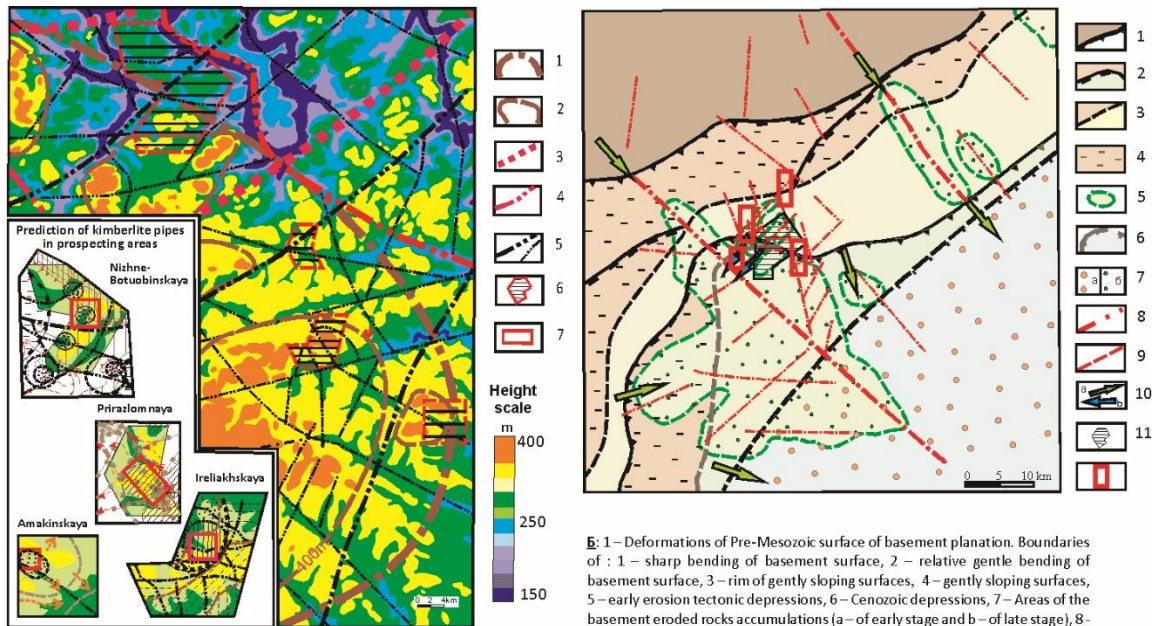


Figure2: Charts of structural and geomorphological zoning of diamond-bearing areas

