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in clayey deposits, with ground ice close to the surface. These locations are considered the most dangerous in terms of the possibility of the craters formation.

Field data used in this study was obtained through the RSF grant 16-17-16-17-10203

GEOMORPHOLOGIC CONDITIONS OF THE ANTIPAYUTA GAS-EMISSION CRATER BASED ON REMOTE SENSING

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As a continuation of Yamal gas-emission craters research we started the study of the Antipayuta crater located in the western part of the Gydan Peninsula in the upper reaches of the Yuribey River (Kizyakov et al, 2017). Remote sensing is used to assess the geomorphological effect of crater formation. Digital elevation models are created based on processing of very-high spatial resolution stereo pairs both before and after the formation of the Antipayuta crater to characterize relief evolution. Stereo pairs closest to the time of the crater formation and available for ordering are acquired on August 21, 2013 and October 11, 2014.

As a result of photogrammetric processing of satellite stereo pairs DEMs have been produced with a 1-m grid pattern. The automated measurement of the x-parallax within sub-pixel accuracy allowed us to increase DEM accuracy, which we estimated as 0.35m for 2013 and 0.55m for 2014. In this regard, relief changes less than 0.9 m have not been analyzed, because they are within the DEMs accuracy. Under the present environmental conditions it is possible to conventionally equate the notions of digital surface model (DSM) and digital elevation model (DEM), since tundra vegetation of the key-site does not exceed 0.5 m.

The remnants of the third terrace, widely distributed within the study area, are significantly dissected by erosion-thermokarst processes. The crater is located on the terrace edge, bordering with the small flatbottom valley. There are polygonal microrelief and small deflation hollows on the terrace surface.

The formation of the Antipayuta crater was preceded by the existence of a mound about 2 m in height, with a base diameter of about 20 m. The dimensions of the mound are smaller than that of the previously studied crater in Central Yamal with 5-6 м height, and a base diameter of about 45-58 м. Analysis of relief changes between 2013 and 2014 indicates the absence of accumulative bodies like those found around Yamal craters (Leibman et al., 2014), which have formed and survived in this time interval, taking into account the method accuracy. If the accumulative forms existed in October 2014, then their thickness was less than the DEM difference relative accuracy, up to 0.9 m. One can assume that since the event of the crater formation, part of the material ejected and deposited directly near the crater edge collapsed into the crater because of the icy walls retreat. Presence and relative stability of the Yamal crater parapet both related to the fact that loamy and clayey deposits, which were ejected to the surface, are more resistant to rainwater erosion.

After the crater formation several small ponds of 1.1-3 m in diameter were observed, probably associated with the impact effect of the fall down of large blocks of frozen rocks and ice that had been ejected from the crater.

Thus, position on the top of the terrace and domination of sandy deposits differs Gydan Antipayuta crater from Yamal craters. The absence of an accumulative parapet is another difference between the Antipayuta and the Yamal crater. One more specific feature is small area and height of the pre-crater mound compared to Yamal's crater. The data obtained shows that the search for the mounds-predecessors of the gas emission craters could not be based on the mound dimensions because of their considerable variations.

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