

CHARACTERS OF CHANGES THERMOPHYSICAL PARAMETERS OF THE MARTIAN POLYGONAL TERRAINS IN DEPENDENCE FROM THEIR GEOGRAFIC POSITION.

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Introduction: We have present results of Mars Climate Database (MCD) data analyses based on **General Circulation Model (GCM)**. The last one was produced for Earth and later it was adopted for Martian conditions [1]. The adoption adjust with new data of last missions which had investigated climatic dependences on the planet. Thermal surface data of thermal flux to surface were analysed for sites there we previously have found maximum polygonal pattern grounds concentration. Finally we have received data of above mentioned characteristics change in dependance of latitude and longtitude. We have made average-out of these parametres on seasons and produced their model processing. As a result we have a graphs of thermal profiles of polygonal sites with depth of zero annual amplitude attenuations. In our opinion it allow to come to the polygonal classification on new base, which have founded on factorial material and approved two-layers model of martian surface.

Observation: Our investigation have included analyses of thermal changes graphs in dynamic monitoniring during martian year for sites with coordinates (first site - 65N, 48E; second site - 65S, 48E; third site - 65S, 30E), there we had found polygonal pattern ground terrain, which were refered by us [2] to ice-cracking process results (Fig. 1,2,3). We have produced

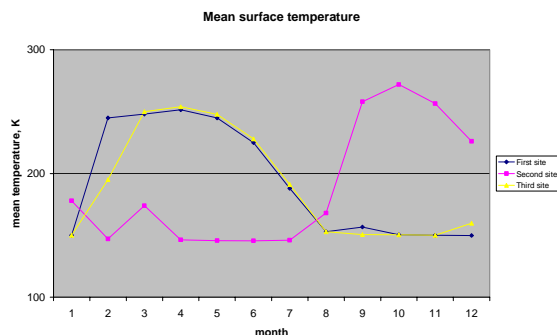


Figure 1. Surface temperature dependence on martian seasons for three research sites.

analogic analise for input thermal flux MCD data for these sites. These data have became the basement for calculation analyses of thermal fields of investi-

gated sites, wich were produced with HeatMars program created by specialists of MSU

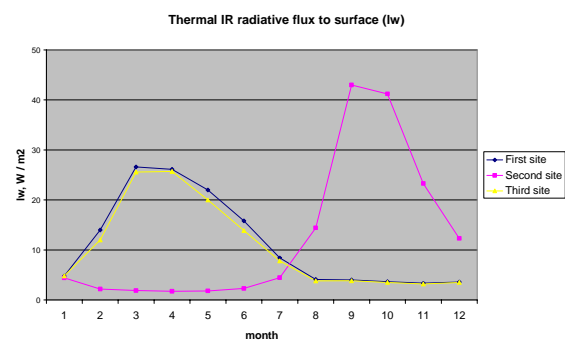


Figure 2. Thermal flux to surface data dependance on martian seasons for three research sites.

Geological faculty criology department planet criology branch. This program permits to receive thermal distribution on depth with MCD given parameters. In previous papers we based in our model calculation on indirect data received through analyses of heat inertion maps, width of cracks and so on. In present

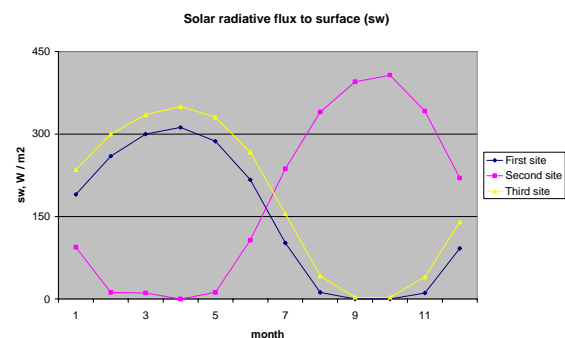


Figure 1. Solar radiative flux to surface data dependance on martian seasons for three research sites.

paper we have used factorial material, what let us increase precision of thermal fields for polygonal sites. We determinated some dependences of depth of zero annual amplitude attenuations for characters sites, which were chosed on the base of previous polygonal classification, connected with comparison with earth analogues and on the using of veri-

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fied methods of terrestrial classification (Rac, Kaplina, Romanovsky).

Conclusions. These results have allowed us to make conclusions about some zoning in thermal parameters changing in dependence with their geographic position and their influence on thermal regime formation for frost ground, composed with sites. Further research in this direction will allow to solve the task of morphologic zoning of Marsian surface and as a result to microrelief map issue, based not only on external factors but on thermal regime and thermal parameters too. In our research we took in account the works of other scientists [4], hence we think that our approach to a problem has deeper basement for zoning tasks.

References:

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