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MODERN TALIK FORMATION ON IV TERRACE OF THE LENA RIVER, CENTRAL YAKUTIA

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Permafrost is very sensitively to surrounding impacts. Taliks formation appears indicator of climate change. Results of geothermal monitoring and drilling showed a year-round talik existence in the range of 2.5-8.0 m depth on the IV terrace of the Lena River near Ulakhan-Taryn area (Fig. 1). Analysis of the freezing-thawing processes and precipitation regime indicates a key role of summer rains in origin of the talik. The increased amount of precipitation in May, June and July 2013 (63.1 mm, 83 mm and 111.9 mm, respectively) increased the intensity and depth of ground thawing and raised soil moisture in the active layer. Subsequent winter freezing was observed only on the depth of 2.5 m. Extracting of the latent heat on the suprapermafrost water border obstructs to deeper freezing. The pressure of suprapermafrost groundwater in April 2014 was 0.5 m. Existence of that kind of thawed ground may be one of the reason of subaerial taliks formation. Such taliks feed intrapermafrost groundwater that confined to the bottom of IV terraces of the Lena River.

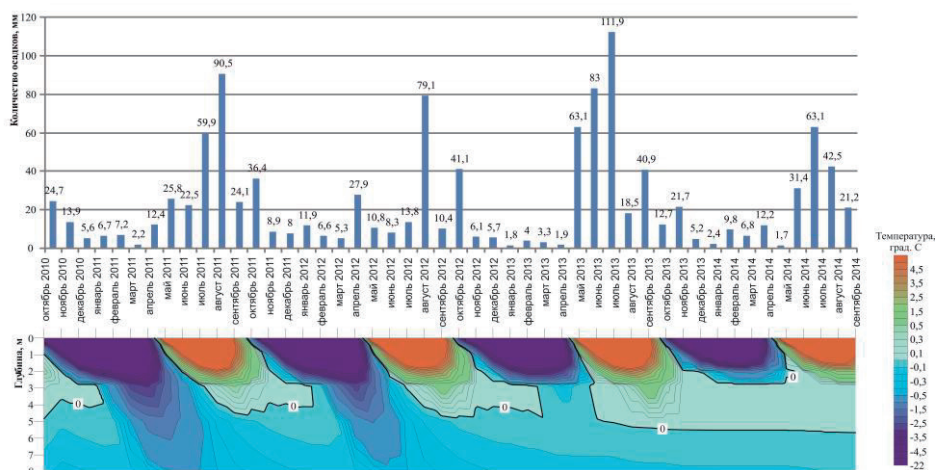


Figure 1. Graph of annual precipitation since 2010 till 2014 and dynamic of active layer thawing