



The isotopic composition of precipitation and surface layers of glaciers in Central Altai

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Please fill in The isotopic composition of precipitation and ice of Altai glaciers can be successfully used to determine the sources of precipitation (water vapor) and trajectories of air masses coming to the Altai territory, to study the modern and paleoclimatic changes in this region and other applied climate and environmental challenges.

This paper presents the results of the study of seasonal changes in the isotopic composition of precipitation and surface layers of warm and cold glaciers in Central Altai.

The isotopic composition of warm glaciers (North Chui Ridge) significantly (by more than 6.5 ‰) facilitated relatively mean value of ice core layers from cold Belukha glacier. This difference primarily may be due to: 1) with multiple cryogenic isotope fractionation of warm glaciers surface, which leads to the formation of significantly lighter ice isotopic composition; 2) accumulation of the edge portion of the warm glaciers occurs mainly due to the winter solid precipitation.

The isotopic composition of summer precipitation (July 2013) in the Central Altai ranged from -7.55 to -10.28 ‰ for $\delta^{18}\text{O}$ and from -135.20 to -136.04 ‰ for δD , which indicates that the formation of precipitation fallen on the earth surface of precipitated on the surface glacier great contribution moisture exchange processes arising from the passage of moist Atlantic air masses over the territory of the Aral- Caspian region.

Integrated use of data on the trajectory of air masses (model HYSPLIT), synoptic situation and the isotopic composition of precipitation can detect features of the formation of precipitation . For example , it was shown to cause rainfall in the Central Altai July 16, 2013 was the formation of occlusions of Altai, and the moisture in the air mass moving over the continent to weak evaporative fractionation .