

Ground temperature regime on slope in basalt plateau area in Central Siberia

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Ground temperature was observed on the mountain slope near Tura (66:19N,100:13E), in the continuous permafrost area in Central Siberia. The ground temperature at the hilltop site was significantly higher than those at the mid slope site and lowland site near the valley of the Kochechm River. The difference was probably caused by thermal conductivity of topsoil, water table, and snow depth as well as the effect of the 1990 fire. There are many longitudinal rock fields along the cliffs of jointed basalt in the study area. The ground temperature in the rock field remained low throughout melt season, because the boulder layer acts as a thermal insulator only in summer season.

Soil temperature profile in the disturbed site, where entire vegetation cover and topsoil was removed, was monitored and compared with that in control site during 2006 winter and 2007 summer. The summer ground temperature in the disturbed site was extremely higher comparing with the control site and indicates that surface moss and lichen mat plays as effective insulator to preserve permafrost on mountain slope.