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Title: *Continuous observations of snow cover in highly industrialized Russian Arctic area (Khibiny Mountains)*

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Khibiny Mountains is the area of Russian Arctic with heavily industrialized and densely populated territories. The region provides significant proportion of areas used for economic purposes and recreation and thus considered to be a model region to implement approaches of sustainable development strategy in the light of global changes. In this case observations on snow cover as one of the main indicator of any change play a significant role.

Khibiny region has a long-standing history of snow cover observations. We analyzed changes of snow cover properties and corresponding temperature conditions during the period of 30 years. As of data of Khibiny scientific station (320 m above sea level) and mountain station "Centralnaya" of JSC Apatit (1050 m above sea level) general properties of snow cover are stable. The length of the snow cover period, dates of stable snow cover formation, average snow mass growth, values of maximum snow accumulation have interannual fluctuations but no significant trend. Within year snow cover stratigraphy also determine the absence of changes both in metamorphism processes, and in distribution of temperature and density in the snowpack layers. However, it is know that the average height of depth hoar in Khibiny Mountains does not exceed 8-9 cm, but the tendency of recent years shows that the height of depth hoar has changed to 12-13 cm.

The tendency of mean winter temperature is defined as 0,15°C per 10 years. Increase of mean annual temperature is also detected by data of Center of Avalanche Safety JSC "Apatit".

Changes in climate may become a major factor in accelerating or influencing social and economic changes and they should be observed in order to understand how these changes impact the overall capacity of people to adapt to contemporary and possible climate changes.