

## A06-P09

### SPATIAL VARIATION OF SNOW COVER IN INDIGIRKA LOWLAND OBSERVED IN SPRING 2014

Shinya Takano (*Graduate School of Environmental Science, Hokkaido University, Japan*)

Shunsuke Tei (*National Institute of Polar Research, Japan*)

Atsuko Sugimoto (*Faculty of Environmental Earth Science, Hokkaido University, Japan*)

Trofim Christoforovich Maximov (*Institute for Biological Problems of Cryolithozone, SB RAS, Russian Federation*)

hawk-field@ees.hokudai.ac.jp

Tundra snow cover is an extremely important to monitor as it influences local, regional, and global-scale surface water balance, energy fluxes, as well as ecosystem and permafrost dynamics. Quantifying the spatial and temporal variations in snow depth, density, and snow water equivalent (SWE) is essential for many applications in hydrology and ecology. Snow survey including observation on the water isotope ratios of snow was conducted in Indigirka lowland near Chokurdakh, Russia, where one of the observation stations of GRENE-TEA has been established in eastern Siberia. Isotopic composition of water is powerful tool for investigation of hydrological processes such as discerning of source water for river discharge, ground ice, etc. The purposes of this study are (1) to know the spatial variations in snow depth, density, SWE and stable isotopic composition in this area, and (2) to clarify the effects of topographic and vegetative controls on SWE for scaling-up to estimate SWE in areal or regional scale.

Snow survey was conducted in spring 2014 during the period from 14 to 28 April. Two transects from Chokurdakh (40 km and 20 km) to south and southwest were set, and observation and sampling were made at 7 points and 4 points respectively. In addition, snow survey was conducted at 25 points in total along three transects (1.2 km in length) at site K where intensive observation site is conducted. The ranges of snow depth, density, SWE and  $\delta^{18}\text{O}$  in this area were 30 to 90 cm, 0.137 to 0.318 g/cm<sup>3</sup>, 70 to 200 mm and -36.5 to -22.9‰ respectively. Observed snow depth depended on vegetation type: snow cover was the deepest at the site covered by dense and tall shrub, while that was shallow at the site of sedge and/or sphagnum wetland. Snow cover on a lake showed the lowest depth. The SWE was also the highest at shrub site, whereas that on the lake was higher than that at wetland because of a high snow density on lake. Spatial variation in delta-values of snow was observed, however no correlation was observed with vegetation type, snow depth and snow density.