

Atmospheric and snow characteristics in Lena river basin

Kazuyoshi Suzuki[1]

[1] IORGC/ JAMSTEC

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Recently, Peterson et al. (2002) showed that Arctic river discharge increases as surface air temperature increases. Furthermore, Yang et al. (2002) showed that variations in the monthly runoff of the Lena River also increased with the increase of winter runoff. Although various factors are mentioned to explain the reason of increasing river runoff, the cause of increases in river runoff remains unknown. The reason will be that the spatial distributions of meteorological stations are insufficient in Lena river basin. Thus, we used physical-based model (Micromet/ Snowmodel, Liston and Elder, 2006a and 2006b) to estimate the hydro-meteorological factors with high spatial resolution. According to estimated hydro-meteorological valuables, we will discuss the spatial and temporal characteristics of snow and atmosphere in Lena river basin.