Japan Geoscience Union Meeting 2012
(May 20-25 2012 at Makuhari, Chiba, Japan)

ACG37-P16 Room:Convention Hall Time:May 22 17:15-18:30

The intensity distribution of snowfall in the cold regions

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In climate changes, such as global warming, a water cycle also causes a global change. In polar region, when change of snowfall changes a area of snow cover and a period, work of ice-albedo feedback process is affected. In order to study the present condition of the water cycle of polar region, or the influence on the future climate, we have to observe snowfall correctly. However, in the snowfall observation using the raingauge currently performed all over the world, the capture rate is 50% or less in many cases. This is intensively called on for improvement in observation accuracy. According to the low-temperature condition in the polar region, many snowfall events have the little amounts in total and they are frequently constructed with weak intensity, which we have to catch in observation. We have been carried out the observation in Niigata Prefecture and Hokkaido until now using some instruments in order to solve such a problem. Our presentation will clarify the snowfall events from the viewpoint of the intensity based on the domestic snowfall data mainly observed by a snow particle counter. Moreover, we would like to comment also about use of ceilometer observation.

Keywords: snowfall amount observation, polar region, cold region, snow particle counter, ceilometer