[A-CC31_29AM2] Glaciology
Convener:*Keisuke Suzuki (Department of Environmental Sciences, Faculty of Science, Shinshu University), Yuji Kodama (National Institute for Polar Research), Chair:Yuji Kodama (National Institute of Polar Research)
Tue. Apr 29, 2014 11:00 AM - 12:45 PM  312 (3F)
The Cryosphere, which consists of snowfall, snowpack, glaciers, ice sheets, ground ice, sea ice, river and lake ice, and so on, is a fundamentally important part of geo-system. This session will promote discussion of various results of the scientific research in all components of the cryosphere.

12:30 PM - 12:45 PM

[ACC31-P02_PG] Studies on internal structure of active glacier in the Tateyama Mountains
3-min talk in an oral session
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Keywords: glacier, perennial snow patch, Mt. Tateyama, Mt. Tsurugi, boring

In 2013, we carried out 20 m depth boring in the Sannomado Glacier (2000 m above sea level), in the Tateyama Mountains, the northern Japanese Alps. The 20 m core was analyzed paying attention to the structure of firn and ice. The following observations were carried out; (i) stratigraphic observation of snow layer and glacier ice, (ii) measurement of density profile, (iii) measurement of grain shape and profile of grain size, (iv) observation of elongation of air bubbles. The internal structure of the Sannomado Glacier was characterized by obvious boundary between firn and ice. At the depth of 5 m, there was a distinct dirt layer formed in the last autumn. Above this dirt layer, firn transformed into ice abruptly and the density curve showed a discontinuity to 850 kg/m³. The temperature of the snow and ice measured in the borehole was 0°C throughout the layer. Spouting water was found in the borehole, indicating an aquifer in the glacier. From these results, such a rapid transformation process from snow to ice in this glacier will be discussed. The grain size gradually increased with depth and elongation of air bubbles was shown below 15 m which suggests internal flow of the glacier.