

Identifying the ice thickness of five perennial snow patches in the Tateyama Mountains based on GPR soundings

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We carried out ground penetrating radar (GPR) soundings in the Kuranosuke, the Hamaguri-yuki, the Tsurugisawa, the Chojiro and the Ikenotan-migimata perennial snow patches in the Tateyama Mountains, the northern Japanese Alps since 2012. The Kuranosuke and the Ikenotan-migimata perennial snow patches had large ice masses (>30 m in thickness). We had measured the surface flows of both ice masses since 2011. The maximum surface flows of the Ikenotan-migimata and the Kuranosuke perennial snow patches were about 2 m a⁻¹ and 0.14 m a⁻¹, respectively. Thus, we regard the both snow patches as active glaciers.

The Hamaguri-yuki, the Tsurugisawa and the Chojiro perennial snow patch had thin ice masses (<20 m in thickness). It is possible that these ice masses are not flowing at the present time. Thus, we guess that these snow patches are glacierets rather than active glaciers.

Keywords: glacier, perennial snow patch, Mt. Tateyama, Mt. Tsurugi, GPR