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Chemical dynamics of snowpack in the Northern Japan Alps during snowmelt season

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Abstract

A snow pit study was conducted on Mt. Norikura in the Northern Japan Alps from January to April 2007 to clarify the chemical dynamics in the snowpack during the snowmelt season. Little snowmelt occurred before February 6, the first snowmelt occurred between February 6 and 21, and the peak of the snowmelt season occurred after March 7. Snow layers with remarkably high Cl^-, NO_3^-, and SO_4^{2-} concentrations in the snowpack were traced; furthermore, the snow layers with high SO_4^{2-} concentrations were found to disappear first. It was concluded that the ease with which the ions were flushed out from the snowpack was $SO_4^{2-} > NO_3^- = Cl^-$.