

Chemical dynamics of the snow melt water in the Japanese Alps

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The source of chemical constituents in the snow melt water is from the winter precipitation and dry deposition. These chemical constituents remain unchanged in snowpack until the snow melt season. The chemical constituents disseminate from the surface of snow particle during the melting season and intermix with snow melt water. Chemical concentration of snow melt water is higher than the snowpack. The influence of snow melt water in the river ecosystem contains comparatively higher chemical substances. The purpose of this research is to clarify the features of the chemical dynamics of snow melt water in the heavy snow region without artificial influences in Japanese Alps.

The study site was the east slope of Japanese Alps. The stream water was periodically collected by using an automatic sampler. The snow melt water was collected by a snow lysimeter. After filtering the sample, the pH and electric conductivity were measured. Concentration of major ions (Na^+ , NH_4^+ , K^+ , Mg^{2+} , Ca^{2+} , Cl^- , NO_3^- , SO_4^{2-}) were measured with an ion chromatograph. In addition, HCO_3^- concentration was measured using the sulphuric acid titration method. The pH and EC of stream water were decreased with the runoff increased and increased with runoff decreased.