

# Water quality synthesis analysis at period of winter in Niigata Prefecture Uono river basin

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## 1 Introduction

Uono river located in the Chuetsu area in Niigata Prefecture is a class A river where with MT,Tanigawa who is the prefectural boundary in Niigata Prefecture and Gunma Prefecture and it joins the Shinano river. The entire river basin is known as a heavy snowfall area. Therefore, it is a factor to cause the snow melting flood putting it in early summer at the early spring, and to change the river quality. Authors investigate the water quality in the Uono river basin in 2009, clarify the water quality variation that passes summer, winter, and year, gather the sample of the water quality observation, the depth of snow cover, and the snow in the entire river basin in addition in winter of 2009-2010,2010-2011 years, and have been considering the relation between the snow and the snowfall and the river quality in winter. It aimed to consider the water quality variation, the depth of snow cover change, and the snow conditions change in the same valley overall in this text based on the observational result every every day that had been done up to now in going winter of the result and one observation a week 2011-12 years and time, and to clarify the water quality variation at the period and the mechanism of the formation in winter.

## 2 Result and consideration

The day change is large, and in EC change of the snowfall period of the main stream downstream part, the maximum value is 153microS/cm, and is minimum and 94microS/cm. The decrease of EC value is not seen for the 14th though EC ground has decreased when the water level rises, and EC change does periodic movement every day.(Figure1)EC value decreased gradually, and it decreased rapidly until 2nd - 6th in April for the pH at the snow melting period. Moreover, an abrupt increase was seen from the night to early morning of the 19th - EC value the 20th. (figure2)When the relation between EC value and the dissolved constituent in the snowfall was seen, the correlation of Na and Cl was comparatively good, and the result of looking like was obtained in the stream water at the snow melting. Because these densities are higher than the density of Mg and Ca, the factor of a rapid rise of river EC value seems Na and Cl element river that originates in the snow. (Figure 4 and Figure 5)

Keywords: Uono river basin, water quality synthesis analysis, water quality variation, diurnal variation, secular variation

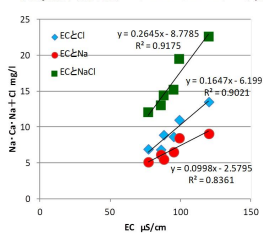
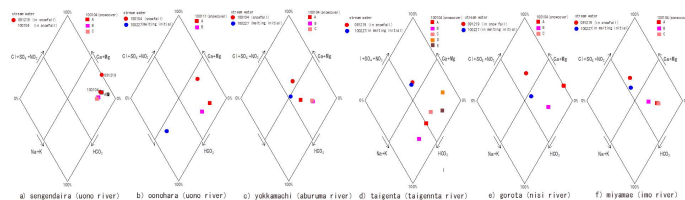


Figure4 EC and correlation of Cl, Na, and NaCl

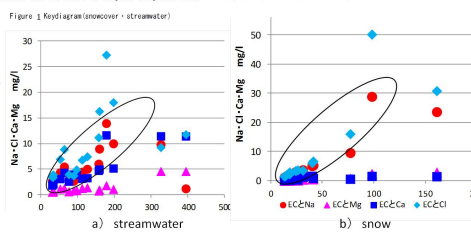


Figure5 Correlation of EC and dissolved constituent

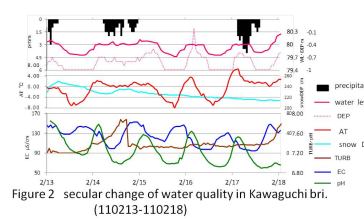


Figure 2 secular change of water quality in Kawaguchi bri. (110213-110218)

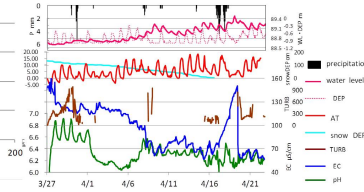


Figure 3 secular change of water quality in Aoshima bri.