Japan Geoscience Union Meeting 2010
(May 23-28 2010 at Makuhari, Chiba, Japan)

AHW017-P10 Room: Convention Hall Time: May 26 17:15-18:45

An annual water quality variation and their factor in the Uono

Yoichi Morimoto[1*], Koji Kodera[2]

[1]Undergrad.Hosei univ., [2]Hosei.univ.

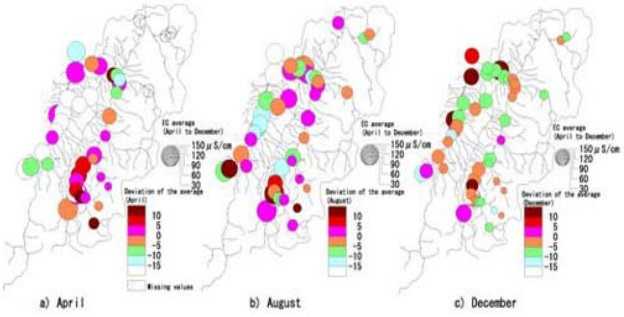

Figure1 EC average and deviation of each month

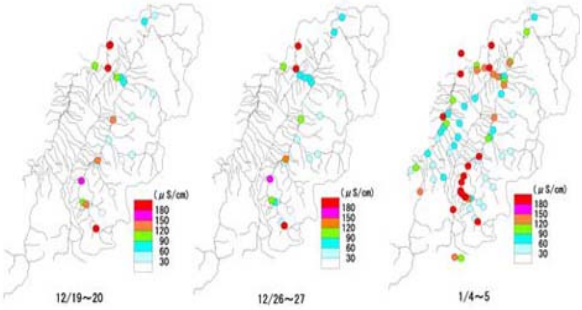

Figure2 EC in snow during (0912~1001)

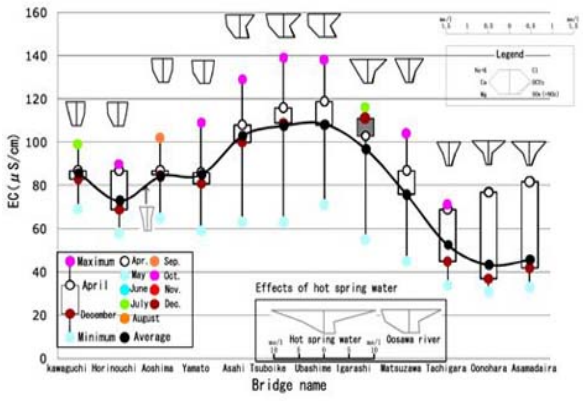

Figure3 EC maximum, minimum, and average values and April, December

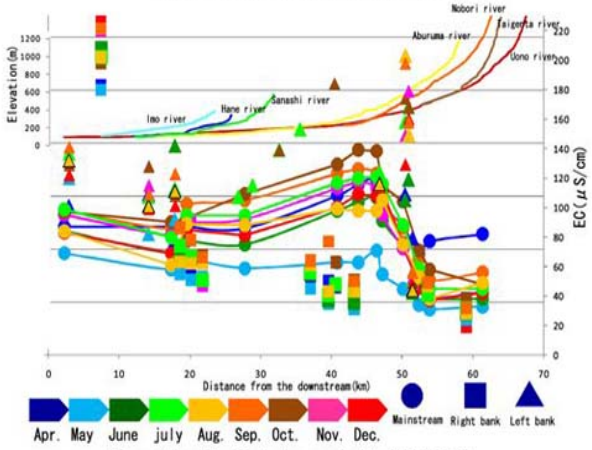

Figure4 Longitudinal changes in EC (0904-0912)

1.Introduction

The river flows through the heavy snowfall has affected the water quality impact is significant snow cover and
snow-melting behavior, environmental characteristics and hydrological characteristics of river water will be
distinctive. In addition, such as warm warm snow cover area during the snowmelt and snow, requires detailed
observations have considered. The authors have targeted the area around the Uono River the local hydrological
observation has been a continuous snow cover, snowmelt during the snow survey conducted in addition to
hydrological observation area around the origin, We are monitoring the watershed. In this study, using data from

public water environment and hydrological observation and snow depth observations in the field, in particular,
the study made it clear for river water quality characteristics and their factor during the worm seasons and the
snow seasons.

2.About Target Area

Head has Uono River Mt.Tanigawa sources in the western basin area is 1519m2, the main channel length of 68km.
Basin is Echigo Mountains , Uonuma Hills, Gunma Prefecture, and that without the border of Fukushima
Prefecture. The area is known as a heavy snowfall, the average annual runoff 11.2m3/s/100k square, 3532mm
high and runoff is Japan boasts one of the largest flow rate. Catchment basin shape factor, respectively, and
average width of 23 km and 0.35.

3.Method

Uono River Basin in Apr. 2009 once a month and a fixed observation times, conducted a survey in 81 points up.
And it do Shinano River Uonuma midstream. In addition, from Dec.19 observed snow depth, snow samples were .
Major components of dissolved samples was measured by ion chromatography and alkalinity measurements, TOC
total dissolved carbon were analyzed by the spectrometer

3.Result

Significant fluctuations in the middle of the seasonal variation and explore the mainstream Uono river
warm season than the lower reaches higher EC values. Apr. 12 through early 2009, the mainstream EC
longitudinal changes seen from the upper reaches, the lowest recorded in the EC is the fifth month, middle of the bridge except for the highest value recorded Igarashi Mon 10 did. Upstream of the main
stream in Apr., the highest EC value. Longitudinal changes in EC and in 2009 I saw Apr. major dissolved
component of the month changes from the upstream water quality of the three can be divided into two
types, Na, and k, Cl on the high concentration of middle-class, it Mg, Ca, SO4 downstream of the addition, the low concentration of dissolved component of the overall middle class that had a high concentration of HCO3. Increase in the concentration of dissolved components and Naka Ryou Mg Ca,
SO4 is a tributary of the growing concentration of hot spring water contamination significantly affect the
influx of even watching , Major components of dissolved similar to the hot spring showed water type.
Headwaters of the mainstream is through high-speed roads, and spray anti-freeze, especially when large
amounts of snow dumped in the river because of the snow was snow in Apr. that the EC is considered to
contribute to the elevation of , 2009 Dec. 19, starting from the day in the winter survey, the most upstream point 300microS/cm the extremely high values recorded above.

4.Conclusion

In the future, using the results of sampling snow depth and snow density and snow, river water quality
changes during snowmelt runoff and snowmelt, examines the formation of water quality, GIS want to aim
to build a water balance model using the material balance.

Reference

Yoichi Morimoto Koji Kodera(2009): Study on water quality variation and mass balance in the Uono River basin,
Year 2009 Committee Physical Limnology Abstract presented
Yoichi Morimoto Koji Kodera(2010): Factor of the water quality change during the warm season in the Uono
River basin, Year 2010 The Associations of Japanese Geographer Abstract presented.

Keywords: Uono River basin, electrical conductivity, seasonal variations,
characteristics of water quality, snow depth