

## Relationship between groundwater flow system and biochemical characteristic(1)Analysis for groundwater flow and groundwater age

# Isao Machida[1]; Yohey Suzuki[1]; Mio Takeuchi[1]

[1] AIST

This study focused on biochemistry in groundwater along groundwater flow path. To obtain fresh and less-contaminated water samples, we collected them from artesian wells distributed widely in Koito River basin in Chiba Prefecture, Japan. This basin has simple multi-geologic layer system and whole layer system declines about 10 degree to north. The aquifer is Quaternary sand layers embedded in impermeable clay layers. From the view point of this geology and geomorphology, previous study stated that the recharge area of the groundwater in the aquifer distributed in Kanosan Hills where locates southern part of the basin. We, therefore, collected groundwater samples along NS direction, which is the estimated ground water flow direction. The screen depth of wells changed from approximately 150m in Kanosan Hills near recharge area to approximately 400m in the vicinity of Koito Rivers. The sampled waters were analyzed for determining the chemical, isotopical, and microbiological properties.

Most of groundwater quality and stable isotopes are almost identical. It suggested that the recharge area of collected groundwater is quite similar and the groundwater flows through unique aquifer. The radioactive age obtained by  $^{14}\text{C}$  evolves from six hundreds to three thousand years in Kanosan Hills to several to about twenty thousand years near Koito River. These results support the groundwater flows from north to south.