Secular varition of stream runoff and dissolved concentration on a granitic mountain headwater catchment

Toyomitsu Shige-eda[1]; Shinichi Onodera[2]

[1] Grad.,Hiroshima Univ.; [2] Integrated Sci., Hiroshima Univ

The study is to clarify the compositional properties of stream water using the relationships between chemical components concentration in stream water and stream runoff on a granic mountainous hedwater catchment in coastal area,.Seto inland sea, in Japan. Due to the fact that the fluctuation of stream runoff is a reflection of ground water volume fluctuation, the changes in chemical properities of the stream runoff are determined based on the relationship between the fluctuation of stream runoff and concentration in stream water. Consequently the analysed chemical parameters show 3 different patterns of variation with respect to the runoff. One of the patterns revealed increase in Ca2+, K+, NO3- with runoff. This is attributed to the dissolution and release of these parameters from the surface solid by the rising ground water level, associated with rainfall. Furthermore, the variation of Ca2+ concentration as one of the exchangeable cation in surface solid, is different from the other chemical parameters. This is reflected by the fact that Ca2+ concentration unlike other oparameters, decrease duaring peak runoff. The decrease in Ca2+ concentration is due to the fact that the bulk of the Ca2+ exchangeable ions are flushed out duaring large storm flow events.