Geophysical Research Abstracts,
Vol. 11, EGU2009-11787, 2009
EGU General Assembly 2009

The estimating of Curve Number from River Level for real-time flood forecasting system

M. Han (1) and Kanghoon Yoon (2)

(1) Korea Institute of Construction Tech,Ilsan,Rep. of Korea(mshan@kict.re.kr/+82 31 910 0251), (2) Korea Institute of Construction Tech,Ilsan,Rep. of Korea(khyoon@kict.re.kr/+82 31 910 0251)

In the South Korea, the NRCS runoff curve number method is used to estimate the effective rainfall and the CN has much effect on the peak discharge and time for the real-time forecasting system.
According to the experience and existing research about flooding forecasting system, the new method to estimate CN would be necessary, since it is very difficult to operate the flood forecasting system using the method which uses the AMC from 5-day antecedent rainfall developed by NRCS.
It could be assumed that the maximum potential retention(S) will be related to the groundwater or groundwater levels; therefore, the relationship between water stage in river and maximum potential retention(S) would be investigated.
In order to derive the relationship, the flooding data of 1980 through 2007 in Sulmachun and Pyungchang River is used, since this data is delicately constructed.
Here, the CN is calculated using the total rainfall discharge and the total depth of runoff discharge at the flooding period and then water stage in river and maximum potential retention(S) would be determined.
The relationship between water level in river and maximum potential retention(S) or CN has a higher correlation under the specific water stage of about 0.1m$\hat{3}$/sec/km$\hat{2}$; however, it shows relatively lower correlation above the specific water level.
This result shows that NRCS method represents the relationship very well in the lower water stage as infiltration is actively occurred with relatively higher maximum potential retention(S).

Keyword : CN, rela-time forecasting system, water stage