Title: Exponential Smoothing Method of Base Flow Separation and Its Impact on Continuous Loss Estimates

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Source: American J. of Environmental Sciences 4(2): 136-144 , 2008

Abstract: The calculation of loss is vital for design flood estimation models and in order to estimate continuing loss (CL), proportional loss (PL) and volumetric runoff coefficient, the surface runoff has to be separated from the total given in a stream flow hydrograph. To obtain the volume of surface runoff from the streamflow hydrograph, baseflow separation becomes necessary and in this paper a few base flow separation methods are explored and an appropriate method selected to assess to impact of baseflow on loss estimates. The process of separation requires a base flow separation coefficient and this coefficient (α) is selected from individual study catchments from 3 to 5 rainfall streamflow events of the same catchments based on sensitivity analysis. The selected α value of individual catchments is then applied to other rainfall streamflow events of a given catchment. It has been observed that a small degree of error in the selection of α value does not seem to affect the estimates of the CL, PL or runoff coefficient. Hence, the more practical base flow separation method used in this paper may be applied to other rural catchments for baseflow separation in design loss studies.