

An empirical tool for loss estimation in fully ungauged basins based on a combined use of Green-Ampt model and Curve Number method.

The Soil Conservation Service - Curve Number (SCS-CN) method is a popular rainfall-runoff model widely used to estimate losses and direct runoff from a given rainfall event, but its use is not appropriate at sub-daily time resolution. To overcome this drawback, a mixed procedure, referred to as CN4GA (Curve Number for Green-Ampt), was recently developed including the Green-Ampt (GA) infiltration model and aiming to distribute in time the information provided by the SCS-CN method. The main concept of the proposed mixed procedure is to use the initial abstraction and the total volume given by the SCS-CN to calibrate the Green-Ampt soil hydraulic conductivity parameter. The procedure is here applied on a real case study and a sensitivity analysis concerning the remaining parameters is presented; results show that CN4GA approach is an ideal candidate for the rainfall excess analysis at sub-daily time resolution, in particular for ungauged basin lacking of discharge observations.