

RHEM Input File Parameter Descriptions

! Uniform Hillslope

BEGIN GLOBAL

CLEN ! The characteristic length of the hillslope in meters or feet
UNITS ! Metric or English units
DIAMS ! List of representative soil particle diameters (mm or in) for up to 5 particle classes
DENSITY ! List of densities (g/cc) corresponding to the above particle classes
TEMP ! Temperature in degrees C. Not used by RHEM
NELE ! Number of hillslope elements (planes)

END GLOBAL

BEGIN PLANE

ID ! Identifier for the current plane
LEN ! The plane slope length in meters or feet
WIDTH ! The plane bottom width in meters or feet
CHEZY ! Overland flow Chezy Coeff. ($m^{(1/2)}/s$) (square root meter per second)
RCHEZY ! Concentrated flow Chezy Coeff. ($m^{(1/2)}/s$) (square root meter per second)
SL ! Slope expressed as fractional rise/run
SX ! Normalized distance
CV ! Coefficient of variation for K_e
SAT ! Initial degree of soil saturation, expressed as a fraction of the pore space filled
PR ! Print flag
KSS ! Splash and sheet erodibility coefficient
KOMEGA ! Undisturbed concentrated erodibility coeff. (s^2/m^2) value suggested by Nearing 02Jul2014
KCM ! Maximum concentrated erodibility coeff. (s^2/m^2)
CA ! Cover fraction of surface covered by intercepting cover - rainfall intensity is reduced by this fraction until the specified interception depth has accumulated
IN ! Interception depth in mm or inches
KE ! Effective hydraulic conductivity (mm/h)
G ! Mean capillary drive, mm or inches - a zero value sets the infiltration at a constant value of K_e
DIST ! Pore size distribution index. This parameter is used for redistribution of soil moisture during unponded intervals
POR ! Porosity
ROCK ! Volumetric rock fraction, if any. If K_e is estimated based on textural class it should be multiplied by $(1 - \text{Rock})$ to reflect this rock volume
SMAX ! Upper limit to SAT
ADF ! Beta decay factor in the detachment equation in Al-Hamdan et al 2012 (Non-FIRE)
ALF ! Allow variable alfa in the infiltration Smith-Parlange Equation, $\text{alf} \leq 0.05$, Green and Ampt
BARE ! Fraction of bare soil to total area
RSP ! Rill spacing in meters or feet
SPACING ! Average micro topographic spacing in meters or feet
FRACT ! List of particle class fractions - must sum to one

END PLANE