RainOff : a conceptual rainfall-runoff simulation model with a nonlinear reservoir

Totally free download of software

Summary:

The RainOff computer program, or simulation model, calculates runoff from rainfall on watersheds (hydrologic catchment areas) whose extension is limited by the condition that the rainfall can be assumed evenly distributed over the area. The program can be freely downloaded, it is free shareware in the public domain.

The rainfall is converted into recharge by routing through a retention reservoir from which water escapes depending on predetermined characteristcs as storage capacity, initial storage and maximum rate of escape (representing evaporation or subsurface drainage). This first reservoir gives the recharge (rainfall excess) as overflow.

The recharge is routed through a second, non-linear, reservoir with a reaction factor whose value depends on the storage level. Thus, the conversion (transformation) of rain into runoff (surface drainage) and flooding is produced.

Modelling with RainOff gives the opportunity of predicting the hydrology of the watershed (catchmnent) and of flood forecasting.

Details:

The reaction (response) factor can be determined from recorded rainfall-runoff data. The program uses various reservoir functions and selects the optimal function. Alternatively, it is possible to introduce the reservoir function, together with rainfall data, and the program will calculate the runoff.

On 27 Agust 2012 the program was updated to include a quadratic reservoir function and on 1 december 2012 a Help function and an observed-calculated graph was added.

On 12 December 2010 an extra graph was provided for the recorded rainfall-runoff statistics and trends, thanks to a suggestion by Mr. Juan Victoria.

More details are given in the program itself.

Start:

The program starts giving clicking on RainOff.Exe.

More information is given in the program itself.

Documentation:

A lecture note ("Data Analysis") on drainage research with examples of RainOff applications is found on the articles page.

An example of the application of the Curve Number Method for the design of a surface drainage system for sugar cane plantations in a humid tropical coastal area can be found in a chapter ("Agricultural Drainage Criteria"), also on the articles page.

Download

RainOff

Go to:

Software

& models

General articles

& manuals

Artículos

(in Spanish,

en Español)

Published

reports & cases

Particular

reports & cases

FAQ's

& answers

Home

page

Introduction screen of RainOff program

Example of RainOff application