

# HYDROL-INF Modeling System

## Introduction

Version 6.10



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## **Introduction to HYDROL-INF Version 6.10**

A modified Green-Ampt infiltration-runoff model (Chu and Mariño, 2005) is the central part of the Windows-based HYDROL-INF. A new algorithm is proposed for determining the ponding condition, simulating infiltration into a layered soil profile of arbitrary initial water distributions under unsteady rainfall, and partitioning the rainfall input into infiltration and surface runoff. Two distinct periods, pre-ponding and post-ponding, are taken into account. The model tracks the movement of the wetting front along the soil profile, checks the ponding status, and, in particular, handles the shift between ponding and non-ponding conditions. Furthermore, the model has been extended to complex rainfall patterns that include both wet time periods with unsteady rainfall and dry time periods without rainfall. In addition, the SCS-CN model is also included in the Windows system and some useful hydrologic tools have been developed and incorporated in HYDROL-INF.

Funded by the National Science Foundation, this new version of HYDROL-INF is developed based on the previous one. Particularly, the modified Green-Ampt model in this new HYDROL-INF accounts for the hydraulic effects of surface ponded water on infiltration and unsaturated flow.

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### **Notes for Windows Vista and Windows 7 Users**

The compatibility of HYDROL-INF with the Windows Vista and Windows 7 operating systems has been tested. It works well in both new Windows systems. But, two issues have been noticed:

1. Due to the use of higher security technologies, Windows Vista and Windows 7 do not allow any application programs to copy and write files to the folder: C:\Program

Files. Thus, users cannot select any folder within C:\Program Files as their working directory.

2. The Help files in the software require the Windows Help (WinHlp32.exe) program. Starting with the release of Windows Vista and Windows Server 2008, Microsoft has decided to no longer include in WinHlp32.exe as a component of the Windows operating system. For details, please refer to: <http://support.microsoft.com/kb/917607>  
*Solution:* Users need to download and install WinHlp32.exe.

For the Windows Vista operating system, the Windows Help program is available at: <http://go.microsoft.com/fwlink/?LinkID=82148>.

For the Windows 7 operating system, please visit:

<http://www.microsoft.com/downloads/details.aspx?familyid=258AA5EC-E3D9-4228-8844-008E02B32A2C&displaylang=en#top>

### **Contact Information for limited technical support**

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