

HEC-Geo HMS

Model Uses To develop hydrologic modeling inputs for HEC-HMS.

Major Categories Hydrology and Water Use

Subject Knowledge Level
Intermediate

Minor Categories Flood; Flow; Run-off; Temperature

Technical Difficulty Level
Advanced

Model Type Data Analysis Package

Geographic in Nature?
Yes

Abstract

The Geospatial Hydrologic Modeling Extension (HEC-GeoHMS) is a software package for use with the ArcView Geographic Information System. GeoHMS uses ArcView and Spatial Analyst to develop a number of hydrologic modeling inputs. Analyzing digital terrain information, HEC-GeoHMS transforms the drainage paths and watershed boundaries into a hydrologic data structure that represents the watershed response to precipitation. In addition to the hydrologic data structure, capabilities include the development of: grid-based data for linear quasi-distributed runoff transformation (ModClark), the HEC-HMS basin model, physical watershed and stream characteristics, and background map file.

HEC-GeoHMS provides an integrated work environment with data management and customized toolkit capabilities, which includes a graphical user interface with menus, tools, and buttons. The program features terrain-preprocessing capabilities in both interactive and batch modes. Additional interactive capabilities allow users to construct a hydrologic schematic of the watershed at stream gages, hydraulic structures, and other control points. The hydrologic results from HEC-GeoHMS are then imported by the Hydrologic Modeling System, HEC-HMS, where simulation is performed.

Future Developments

None noted

Model Limitations

None noted

Model Features

- Integrated work environment with data management and customized toolkits
- Terrain processing capabilities
- Hydrologic schematic tools

Required Data Types

At the least, a Digital Elevation Model, but may also include Hydrologic Unit Codes; Digital Line Graphs; Stream Networks; Streamflow Gage Data; DOQQs; Drainage Facilities Photographs; Street Data; Soil Types Data; Land Use / Land Cover Data.

Model Outputs

Creates a background map file, lumped basin model, a grid-cell parameter file, and a distributed basin model. The background map file contains the stream alignments and subbasins boundaries. The lumped basin model contains hydrologic elements and their connectivity to represent the movement of water through the drainage system. It also includes watershed areas, and reserves empty fields for hydrologic parameters.

Source

US Army Corps of Engineers

Source (URL)

<http://www.hec.usace.army.mil/software/hec-hms/hechms-geohms.html>

Hardware Requirements

Pentium II - 300Mhz

256mb Memory

Hard drive space should be at least 20x the size of the DTM

Supported Platforms			
DOS	<input type="checkbox"/>	UNIX	<input type="checkbox"/>
Windows	<input checked="" type="checkbox"/>	Macintosh	<input type="checkbox"/>

Software Requirements

ArcView GIS 3.x; Spatial Analyst Extension

Cost, Licensing and Availability

Free.

Use of the program is governed by a license agreement. The program can not be used unless the user accepts the terms of the agreement.

USACE typically does not provide support to non corps users.