WMS Course - Watershed Modeling with WMS

Unlocking the Power of GIS and Digital Terrain Data for Watershed Model Development!

Date: Oct 7 - 9, 2002
Location: Park City, Utah

Note: SPACE IS LIMITED - RESERVE EARLY!

WMS Course Description

The watershed modeling training course is designed as a hands-on, application-oriented training course. The course will provide the attendees with the knowledge and tools necessary to get the most out of GIS data developed specifically for watershed modeling and how digital terrain data can be used for development of watershed parameters important to common hydrologic analysis programs.

The course begins with a discussion on how to use GIS and digital elevation data for watershed delineation and hydrologic model development. A series of tutorials and lessons on the WMS interfaces to HEC-1 / TR20 / TR-55 / NFF / Rational Method will be given including an explanation of how to use existing GIS data (with accompanying attributes) to create these hydrologic models within WMS.

Several other important modeling tools include development of composite CN numbers and runoff coefficients, flood plain delineation, and development of travel times using digital terrain data and standard equations.

Since this course will focus more on application than on theory, a knowledge of basic rainfall/runoff modeling principles is recommended, but not required. The training course is taught by the WMS developers and will use the latest version of WMS (v6.1).

WMS Course Objectives

The 3-day course will familiarize attendees with the following topics:

- Watershed delineation and parameter development from Digital Elevations Models (DEMs)
- Triangulated Irregular Networks (TINs)
  - Set up and use of the following hydrologic models:
    - HEC-1
    - TR-20
Watershed Modeling System (WMS) Training Courses

- TR-55
- Rational Method
- National Flood Frequency Program (USGS Regression Equations)
  - Data exchange with GIS systems for hydrologic model development including:
    - Use of vector (basin and stream) coverages for creating model input files
    - Land use and soil type coverages for composite curve number generation
  - Use of digital terrain data for basin lag time and time of concentration computations
  - Watershed model development for urban areas
  - Manipulating DXF objects
  - Flood plain delineation from digital elevation data and stream stage information
  - Creation of professional output in the form of images, plots, and video clips

Instructors

Dr. E. James Nelson. Architect and director of the WMS interface development. Author of WMS reference manual and tutorials. Ph.D., Brigham Young University, 1994. Assistant Professor, Brigham Young University.

Colby T. Manwaring. Vice President, Environmental Modeling Systems, Inc. Colby was involved in the development of WMS for several years as a Research Associate at BYU, authoring the HSPF and MODRAT interfaces and the hydraulic calculators. He is now involved in consulting work and training with EMS-I.

Christopher M. Smemoe. Full-time research associate at Brigham Young University. Primary WMS developer and software manager. Chris has developed several model interfaces in WMS. He has also taken a part in developing the GIS interfaces and grid-based delineation tools in WMS.

WMS Course Schedule

Day One:
- Overview
- Automated Watershed Delineation with GIS Vector Data
- Automated Watershed Delineation with USGS Digital Elevation Models

Day Two:
- Automated Watershed Delineation with TINs
- Using Digital Land Use and Soil Data to Compute CN and Runoff Coefficients
- Computing Time of Concentration and Lag Time from Digital Terrain Models
- Hydrologic Model Interfaces:
  - HEC-1, Regression Equations, Rational Method

Day Three:
- More on Hydrologic Models
- Learn how to download USGS DEMs for use in WMS
- Links to ArcView GIS
- Summary Exercise
- Conclusions

Cost

The cost of the 3-day course is $945 for pre-registration 30 days before the course and $1,045 for registration thereafter. Registration includes the following:

- Instruction and hands-on use of WMS with a personal computer
- Course notes
- Software CD containing WMS software (demo), tutorials, and documentation

Location
The short course will be held in scenic Park City, Utah, a former mining town that has evolved into a world famous year-round resort. Park City is situated in a small, picturesque valley high in the Wasatch mountains. It is home to the U.S. Ski Team and host to many events of the 2002 Winter Olympics. Countless restaurants, shops and art galleries are within walking distance of the short course facilities.

Park City is a year-round resort town and there are plenty of fun things to do. To get a sampling, you may wish to spend some time browsing the Park City On Line or Park City USA sites.

Accommodations

The GMS training course will be held at the Shadow Ridge Hotel in Park City. The Shadow Ridge features deluxe double queen hotel rooms, indoor jacuzzi and sauna, a heated pool, and fitness center. A block of rooms has been reserved for the GMS training course attendees at a greatly reduced off-season rate of $72/night. To receive this rate, you must fill out a special registration form. For other information, please contact the hotel at 1-800-824-5331.

Transportation

If you are traveling from out of state, you should fly in to the Salt Lake City International Airport. Park City is only 45 minutes (30 miles) from the airport via Interstate 80. Salt Lake City International is served by most major airlines. Click here to see a list of shuttle services from the airport to Park City.

About WMS

WMS is a state-of-the-art computer program that utilizes digital terrain data to delineate watershed and subbasin boundaries and computes geometric parameters used in hydrologic modeling. WMS includes tools which aid in the creation of both rural and urban watersheds with interfaces to hydrologic modeling software.

WMS Course Registration

Download Registration Form

Please call us at (866) 620-9214 if you have questions or e-mail us at info@scisoft.com.

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