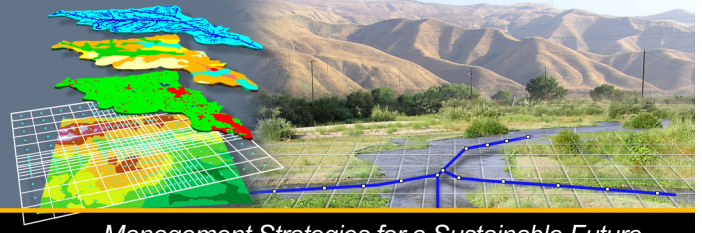




MODHMS®

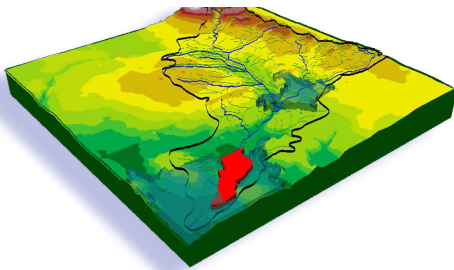


...Management Strategies for a Sustainable Future

MODHMS 1.0 Overview

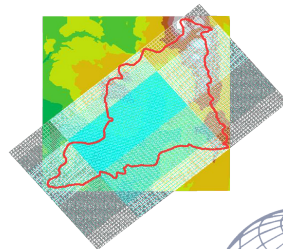
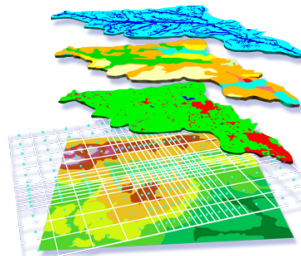
MODHMS®, HGL's latest and most advanced software code, interfaces seamlessly with the popular MODFLOW code to provide a physically based, spatially distributed, integrated surface/subsurface modeling framework hydrologic system. Developed to meet the growing demand for quantifying available water within a hydrologic system and for numerical simulation of complex hydrological processes, MODHMS® extends our MODFLOW-SURFACT™ subsurface modeling code to include overland and channel flow and transport. We use these tools to give water resources managers unsurpassed capability to simulate the complete hydrological cycle and address complex water resources management issues including...

- ▶ Integrated water resource assessment
- ▶ Groundwater availability & safe-yield analysis
- ▶ Conjunctive surface water-groundwater use
- ▶ Stream flow restoration
- ▶ Flood prediction and mitigation
- ▶ Agricultural irrigation management
- ▶ Cleanup of industrial contaminants
- ▶ Watershed-scale analysis of point source and nonpoint source pollution
- ▶ Fluvial hydraulic analysis



Advanced Features

- ▶ Fully implicit coupling of all hydrologic regimes for mass-conserved and robust solutions to systems with strong interactions between regimes
- ▶ Subsurface and surficial density-dependent flow and transport
- ▶ Energy transport (To be released late 2011)
- ▶ Curvilinear grid option to conform model to geometric or topographic features
- ▶ Friction formulas for surface flow and retention formulas for unsaturated flow including pseudo-soil functions representing unconfined flow
- ▶ Adaptive time-stepping for speed and accuracy
- ▶ Picard and Newton-Raphson schemes for efficiency and robustness of non-linear flow solutions
- ▶ Implicit TVD transport schemes for highly accurate, physically consistent transport solutions
- ▶ Advanced PCG and ORTHOMIN solvers
- ▶ Multi-core solver (To be released late 2011)



www.hglsoftware.com



Why MODHMS?

- ▶ The project scope requires a code that is capable of simulating overland, subsurface, and stream channel flow domains interacting with each other, and the associated solute transport therein in a temporally varying, spatially distributed manner.
- ▶ MODHMS® treats the flow of water and transport solutes in a hydrologic system in a rigorous, mechanistic manner by mathematically representing surface and subsurface domains as a holistic system that is solved simultaneously. Thus, key processes that control groundwater/surface water interactions are inherently simulated as part of the numerical solution.
- ▶ MODHMS® has been benchmarked and verified, subjected to scientific review, accepted by federal and state agencies across the United States and used on modeling projects around the world.



Pricing and Packaging

MODHMS™ Version 1 comes with complete documentation including a User's Manual and step-by-step tutorials to get you up and running right away. System requirements are: a Pentium PC, 1GHz, and 1GbRAM.

MODHMS™ Ver. 1.0.....	\$7,300 USD
(FLOW AND TRANSPORT)	
MODHMS™ Ver 1.0.....	\$5,100 USD
(FLOW ONLY)	
PCG5 MODULE.....	\$450 USD
DENSITY-DEPENDENT MODULE.....	\$1,500 USD
TIME-VARYING PROPERTY MODULE	\$900 USD
(SUBSURFACE HYDRAULIC PROPERTIES ONLY)	

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Applicable sales tax, shipping, and handling fees for all prices listed

As a leader in modeling and water resources technologies, we leverage our experience, knowledge, and innovative techniques to resolve the most complex issues. MODHMS®, our most powerful modeling code yet, represents the latest addition to our consulting toolbox of innovative, sustainable, and cost-effective water resources solutions. For more information, please contact Dua Guvanasen, Ph.D. at (703) 478-5186.