






## Hydrology model descriptions

*This is an automatically generated table.*

























Want to **add your model** to this list? Please complete this [questionnaire](#) first. Feel free to contact us [CSDMSweb@colorado.edu](mailto:CSDMSweb@colorado.edu) or use the wiki and follow one of the model links if you want to update the information about a model that is already listed.



Ready to **submit model source code** to the CSDMS repository? Zip or tar the source code and mail it to: [CSDMSsupport@colorado.edu](mailto:CSDMSsupport@colorado.edu), or let us know when the files are to large, we can open a ftp site for you so you can upload your model.

### Table legend

-  Source code not yet available
-  Source code available through owner
-  Source code available through CSDMS repository
-  Source code has a [IRF interface](#)
-  Source code does NOT have a IRF interface but it is possible to create a [IRF interface](#)

*There are 25 hydrology model descriptions available in the table below:*

| Program                               | Description   | Developer                               | Status  |
|---------------------------------------|---|---|---|
| <a href="#">Avulsion</a>              | Stream avulsion model   | <a href="#">Hutton, Eric</a>            |    |
| <a href="#">ChannelOscillation</a>    | Simulates Oscillations in arid alluvial channels  | <a href="#">Pelletier, Jon</a>          |    |
| <a href="#">DHSVM</a>                 | DHSVM is a distributed hydrologic model that explicitly represents the effects of topography and vegetation on water fluxes through the landscape.                                  | <a href="#">DHSVM, Administrator</a>    |  |
| <a href="#">DR3M</a>                  | Distributed Routing Rainfall-Runoff Model--version II   | <a href="#">U.S., Geological Survey</a> |    |
| <a href="#">FLDTA</a>                 | Simulates flow characteristics based on gradually varied flow equation  | <a href="#">Slingerland, Rudy</a>       |    |
| <a href="#">GEOtop</a>                | Distributed hydrological model, water and energy budgets  | <a href="#">Rigon, Riccardo</a>         |    |
| <a href="#">HydroTrend</a>            | Climate driven hydrological transport model   | <a href="#">Kettner, Albert</a>         |  |
| <a href="#">MFDrouting</a>            | Multiple Flow Direction (MFD) flow routing method   | <a href="#">Pelletier, Jon</a>          |    |
| <a href="#">MFDrouting-Successive</a> | Successive flow routing with Multiple Flow Direction (MFD) method   | <a href="#">Pelletier, Jon</a>          |    |
| <a href="#">MODFLOW</a>               | MODFLOW is a three-dimensional finite-difference ground-water model   | <a href="#">Barlow, Paul</a>            |    |
| <a href="#">PIHM</a>                  | PIHM is a multiprocess, multi-scale hydrologic model.   | <a href="#">Duffy, Christopher</a>      |    |
| <a href="#">PIHMgis</a>               | Tightly coupled GIS interface for the Penn State Integrated Hydrologic Model  | <a href="#">Duffy, Christopher</a>      |    |
| <a href="#">ParFlow</a>               | Parallel, high-performance, integrated watershed model  | <a href="#">Maxwell, Reed</a>           |  |
| <a href="#">Pllcart3d</a>             | 3D numerical simulation of confined miscible flows  | <a href="#">Oliveira, Rafael</a>        |    |
| <a href="#">RHESSys</a>               | Regional Hydro-Ecologic Simulation System   | <a href="#">Tague, christina</a>        |    |
| <a href="#">SPARROW</a>               | The SPARROW Surface Water-Quality Model   | <a href="#">Alexander, Richard</a>      |  |
| <a href="#">SWAT</a>                  | SWAT is a river basin scale model developed to quantify the impact of land management practices in large, complex watersheds.   | <a href="#">Arnold, Jeff</a>            |    |
| <a href="#">SWMM</a>                  | Storm Water Management Model  | <a href="#">Rossman, Lewis</a>          |  |
| <a href="#">TOPMODEL</a>              | Physically based, distributed watershed model that simulates hydrologic fluxes of water through a watershed   | <a href="#">Beven, Keith</a>            |    |
| <a href="#">TOPOG</a>                 | TOPOG is a terrain analysis-based hydrologic modelling package  | <a href="#">Silberstein, Richard</a>    |    |
| <a href="#">TopoFlow</a>              | Hydrological model  | <a href="#">Peckham, Scott</a>          |    |
| <a href="#">VIC</a>                   | VIC (Variable Infiltration Capacity) is a macroscale hydrologic model that solves full water and energy balances, originally developed by Xu Liang at the University of Washington. | <a href="#">Lettenmaier, Dennis</a>     |    |
| <a href="#">WASH123D</a>              | Watershed Model, River Hydraulics, Overland Flow, Subsurface Flow, Sediment Transport, Water Quality Transport  | <a href="#">Yeh, Gour-Tsyh (George)</a> |  |
| <a href="#">WBM/WTM</a>               | Water   |   |  |

Balance/Transport Model **Fekete, Balazs**  **WEPP**  Process-based soil erosion by water at field/farm scale **Flanagan,**  
Dennis 