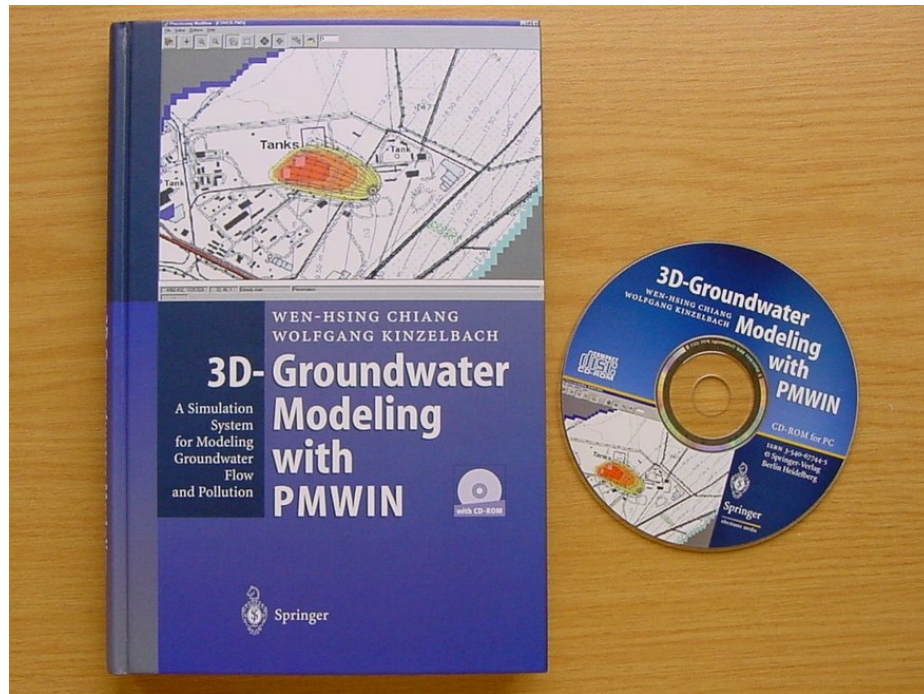


Introducing 3D-Groundwater Modeling with PMWIN



Wen-Hsing Chiang and Wolfgang Kinzelbach
Springer-Verlag ISBN 3-540-67744-5

This book and the companion software Processing Modflow for Windows (PMWIN) offer a totally integrated simulation system for modeling groundwater flow and transport processes with MODFLOW-88, MODFLOW-96, PMPATH, MT3D, MT3DMS, MOC3D, PEST and UCODE.

PMWIN comes with a professional graphical user-interface, the supported models and programs and several other useful modeling tools. The graphical user-interface allows you to create and simulate models with ease and fun. It can import DXF- and raster graphics and handle models with up to 1,000 stress periods, 80 layers and 250,000 cells in each model layer. The modeling tools include a *Presentation tool*, a *Result Extractor*, a *Field Interpolator*, a *Field Generator*, a *Water Budget Calculator* and a *Graph Viewer*. The *Result Extractor* allows the user to extract simulation results from any period to a spreadsheet. You can then view the results or save them in ASCII or SURFER-compatible data files. Simulation results include hydraulic heads, drawdowns, cell-by-cell flow terms, compaction, subsidence, Darcy velocities, concentrations and mass terms. The *Field Interpolator* takes measurement data and interpolates the data to each model cell. The model grid can be irregularly spaced. The *Water Budget Calculator* not only calculates the budget of user-specified zones but also the exchange of flows between such zones. This facility is very useful in many practical cases. It allows the user to determine the flow through a particular boundary. The *Field Generator* generates fields with heterogeneously distributed transmissivity or hydraulic conductivity values. It allows the user to statistically simulate effects and influences of unknown small-scale heterogeneities. The *Field Generator* is based on Mejia's (1974) algorithm. The *Graph Viewer* displays temporal development curves of simulation results including hydraulic heads, drawdowns, subsidence, compaction and concentrations.

PMWIN (version 5.1) is included in the book "3D-Groundwater Modeling with PMWIN", ISBN 3-540-67744-5, Springer-Verlag Berlin Heidelberg New York. Authors: Wen-Hsing Chiang and Wolfgang Kinzelbach. **The companion CD of the book includes full-version program PMWIN and all supported models** (i.e., MODFLOW, MT3D, MT3DMS, MOC3D, PMPATH for Windows, PEST2000, UCODE). Retail price of the book is DEM 298 (≈US\$150).

In addition to the book, several separate Add-On modules are in preparation and will be available soon for a low cost:

MODFLOW-2000:

Supports and includes MODFLOW-2000 Groundwater Flow, Sensitivity, Observation and Parameter Estimation Processes. This Add-On also includes the latest version of PMWIN.

3D-Groundwater Explorer:

3D-Visualization of PMWIN input and output data, including stratigraphy; distribution of model parameters; isosurfaces of head, drawdown and multi-species concentration values; groundwater surface; hydraulic components (e.g., well, river,..., etc.) as well as pathlines.

RT3D:

Supports and includes RT3D versions 1 and 2 for multi-species reactive transport. This Add-On also includes the latest version of PMWIN.

PHT3D:

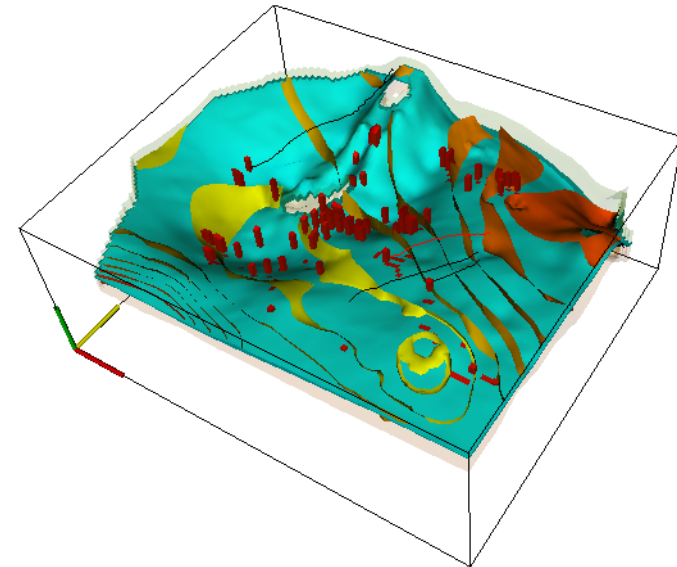
Supports and includes PHT3D for multi-species reactive transport. PHT3D is a coupled PHREEQC and MT3DMS model prepared by Dr. H. Prommer (Edinburgh, UK). PHT3D is currently in Beta-Test. This Add-On also includes the latest version of PMWIN.

CONTACT:

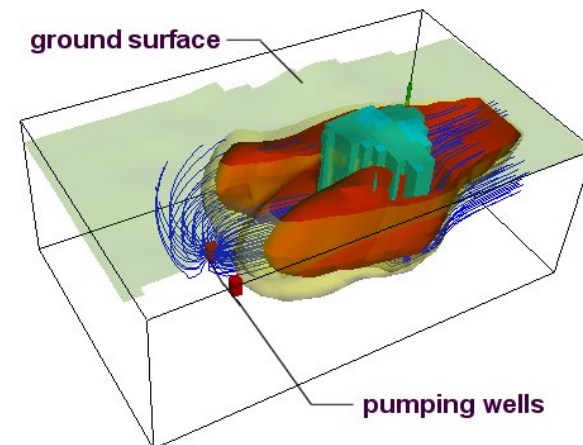
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3D-Groundwater Explorer displaying the stratigraphic structure of a regional groundwater flow model, isosurfaces of hydraulic heads and abstraction well fields.



3D-Groundwater Explorer displaying concentration plumes and the capture zone of a pumping well (blue pathlines). A low-permeability block is located in the center of the model. The yellow colored “shell” of the plume is of lower concentration and is rendered transparent so that one can see the higher concentrated “core”.