MIKE BY DHI SOFTWARE PRODUCT

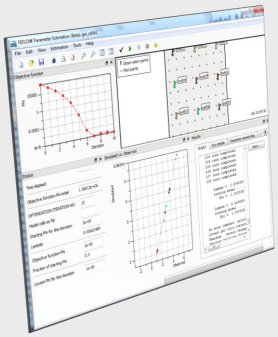
NEWS IN FEFLOW 6.2

The latest developments in the leading premium groundwater modelling software

Groundwater projects are becoming more and more demanding - requiring modelling software with more sophisticated capabilities than ever before.

FEFLOW provides best-in-class technology for groundwater flow, contaminant, groundwater age and heat-transport simulations. With its efficient user interface and its yet unmatched range of functionality FEFLOW has become a standard in premium groundwater modelling over the last 35 years.

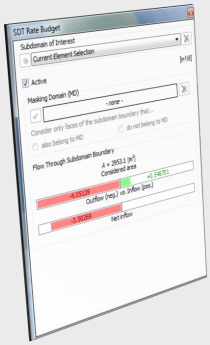
FEPEST



FePEST that is now included with every FEFLOW license is a graphical user interface for using PEST by John Doherty with FEFLOW models. Its advantages include graphical support during the setup process and immediate graphical feedback on the simulation progress.

With FePEST, parameter estimation or uncertainty analysis tasks can be executed in parallel on many computers – requiring only one single license seat of a Corporate License for FEFLOW!

SUBDOMAIN & STORAGE BUDGET



Storage Capture/Release is a new component in the Rate Budget and Period Budget Panels for flow and transport. With this, storage change and solution error can be easily and clearly separated in transient models.

Flow Through Subdomain Boundary can be calculated exactly in new Subdomain Boundary Flow and Subdomain Boundary Volume Panels for flow and transport. Combined with the options of the already existing Rate Budget and Period Budget panels, complete and precise water balances for arbitrary subdomains of the modelcan be obtained with only a few clicks.

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NEW FEATURES (Selection)

GRASP THE UNCERTAIN
FEPEST
Parameter estimation, sensitivity analysis & much more

CONTROL YOUR BUDGET
SUBDOMAIN & STORAGE BUDGET
More user control over local water balance

MOVE YOUR PIT
TEMPORAL ELEMENT DEACTIVATION
Easy implementation of time-varying geometry

TURN THEM ON—AND OFF
TEMPORAL BC DEACTIVATION
Switch on and off all kinds of BCs

GET A GRIP ON AGE
GROUNDWATER AGE CALCULATION
Crucial information for capture zone and risk assessment

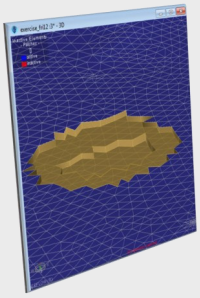
TAKE YOUR CHANCES
RANDOM-WALK PARTICLE TRACKING
Field lines with diffusion and dispersion

CRUNCH THE NUMBERS
NEW SOLVERS
Even better use of parallelization

MASTER THE CHAOS
DATABASES & MAP FILES
More flexibility in map-data storage

ADVANCE YOUR VIEWS
SCENE LIBRARY
Convenient storage for multiple views

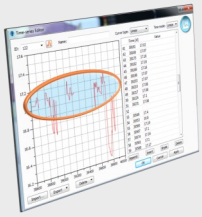
TEMPORAL ELEMENT DEACTIVATION



During the simulation, elements of the finite-element mesh can be deactivated and reactivated.

This makes it easy to simulate time-varying model domain geometry, as encountered in open-pit simulation projects, long-term simulations including morphological changes, etc.

TEMPORAL BC DEACTIVATION

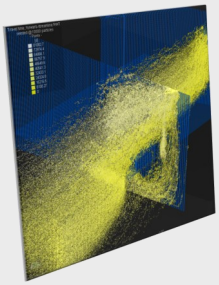


During the simulation, all kinds of boundary conditions can be completely deactivated and reactivated.

This makes it possible to turn on and off boundary conditions without additional plug-ins or complicated and inefficient constraints.

Together with element deactivation, this allows for a very flexible handling of mine-pit progress, construction pits, etc.

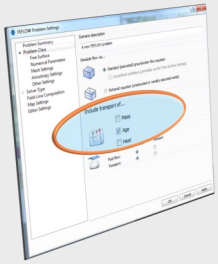
RANDOM-WALK PARTICLE TRACKING



Streamline and Pathline Random-Walk Tracks incorporate diffusion and dispersion into the field-line computation.

With this, field line analysis comes a large step closer to the capabilities of a full advection-dispersion solution at a much lower computational cost and with low preprocessing effort.

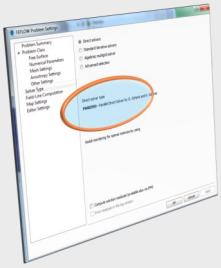
GROUNDWATER AGE



Groundwater Age is a new kind of problem class – similar to mass or heat transport.

Age simulations help to understand travel times, percentages of bank filtration, catchment zones and much more.

NEW SOLVERS SAMG 2.7 AND PARDISO



With SAMG 2.7, FEFLOW includes the latest developments in this algebraic multigrid solver. Additionally, the FEFLOW-specific settings for SAMG have been adapted to even better match the typical FEFLOW models.With this, FEFLOW reaches a new level of solution performance and stability.

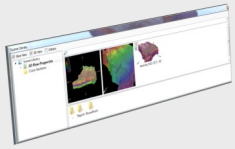
Pardiso (developed by O. Schenk and K. Gärtner) is a parallelized direct solver. As a direct solver, it provides a non-iterative exact solution of the equation system, at an often affordable computational cost thanks to parallelization. Pardiso is the new default direct equation system solver.

EXCEL / ACCESS FILES & GEODATABASES

Tabular data from Microsoft Excel workbooks and Microsoft Access databases can be used for map display, data import and export. With this, already available data in these formats can be easily used without a need for re-formatting.

Geometries and tabular data in ESRI Geodatabases, PostgreSQL and Oracle databases can be used for map display, data import and export. With the additional possibility of joining and selection on the data, project data, including geographical data, can now be easily stored without redundancies and in one single place.

SCENE LIBRARY



Settings for Slice, 3D, Supermesh and Cross-section Views can be collected in the new Scene Library. A user-defined folder structure can be used to keep things in order.

With this, even large numbers of view settings (including animation settings!) can be easily stored without the overhead of always recreating the respective view windows when loading the model and without the memory demand for keeping them open.

Besides these flagship features there will be many more improvements and additions. The release of FEFLOW 6.2 within MIKE by DHI 2014 is scheduled for December 2013.

To find out more, join one of our free online presentations or call your local DHI office!

www.feflow.com/webinars.html

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