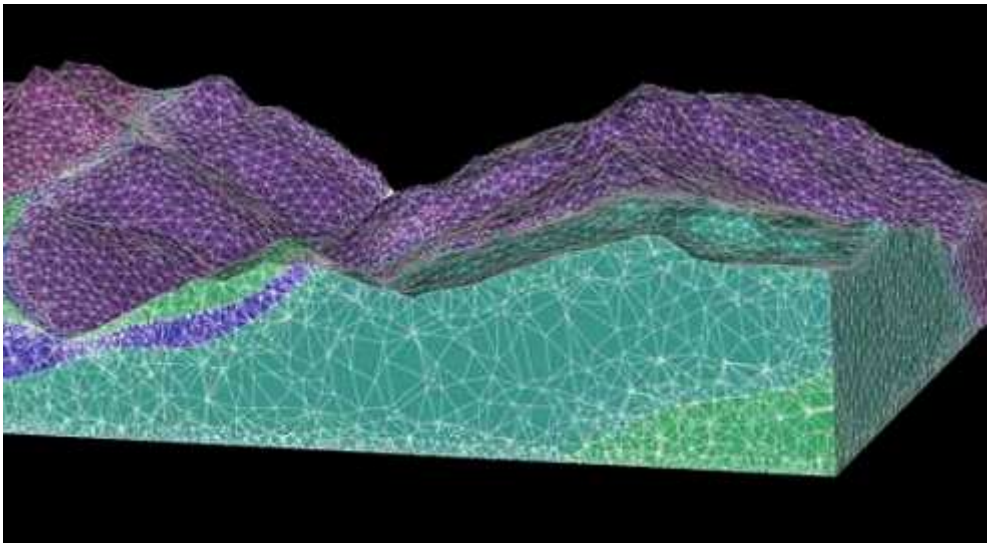
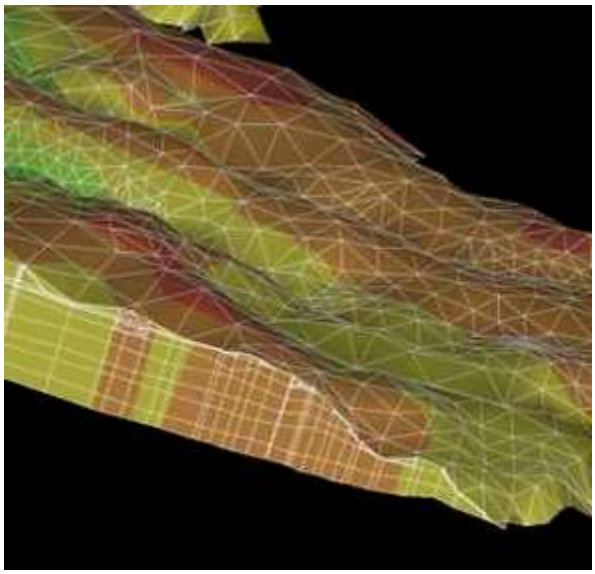
# What's New in FEFLOW 7.0

## 3D Unstructured Meshes in FEFLOW

With the possibility to use layered, partially unstructured, or fully unstructured meshes in 3D, FEFLOW now provides an unprecedented level of geometrical flexibility. Supported by a sophisticated mesh generation algorithm and interfaces to a number of geological modelling frameworks, groundwater models in demanding geological settings can now be set up more easily than ever before. The new meshing options are especially helpful for the precise mapping of inclined boreholes or other underground structures. Compared with a typical layered approach, the total number of calculation nodes will be much lower, allowing for a more computationally efficient solution.



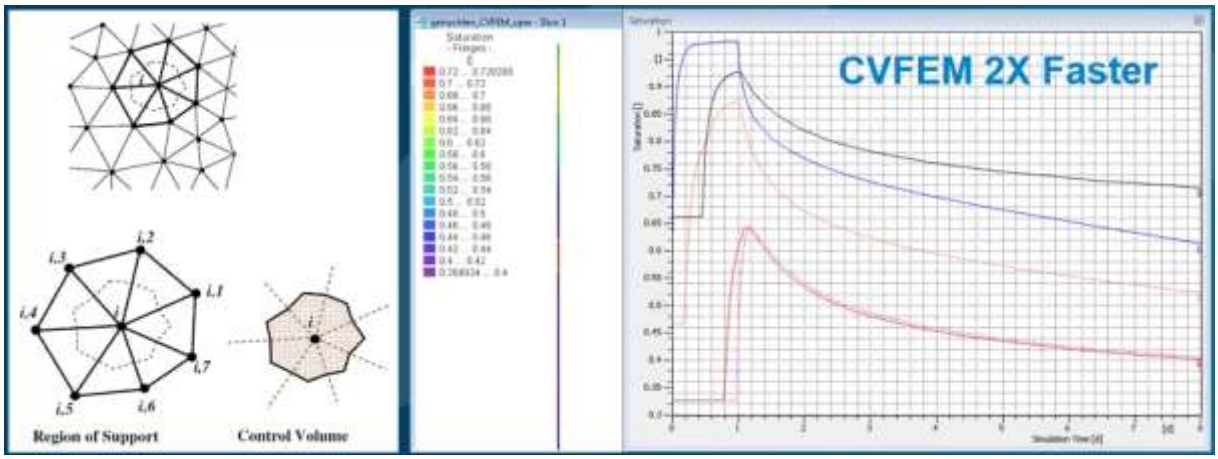
*Full tetrahedral or mixed (prisms and tetrahedral) meshes*



*Zero layer thickness for pinchouts and outcrops*

## Control-Volume Finite Elements (CVFE) method

Combining the finite-element and finite-volume approaches, the CVFE method is provided as an alternative to the Galerkin finite element approach. Especially for unsaturated and variably saturated conditions this will lead to more stability, faster convergence, and a better mass balance..



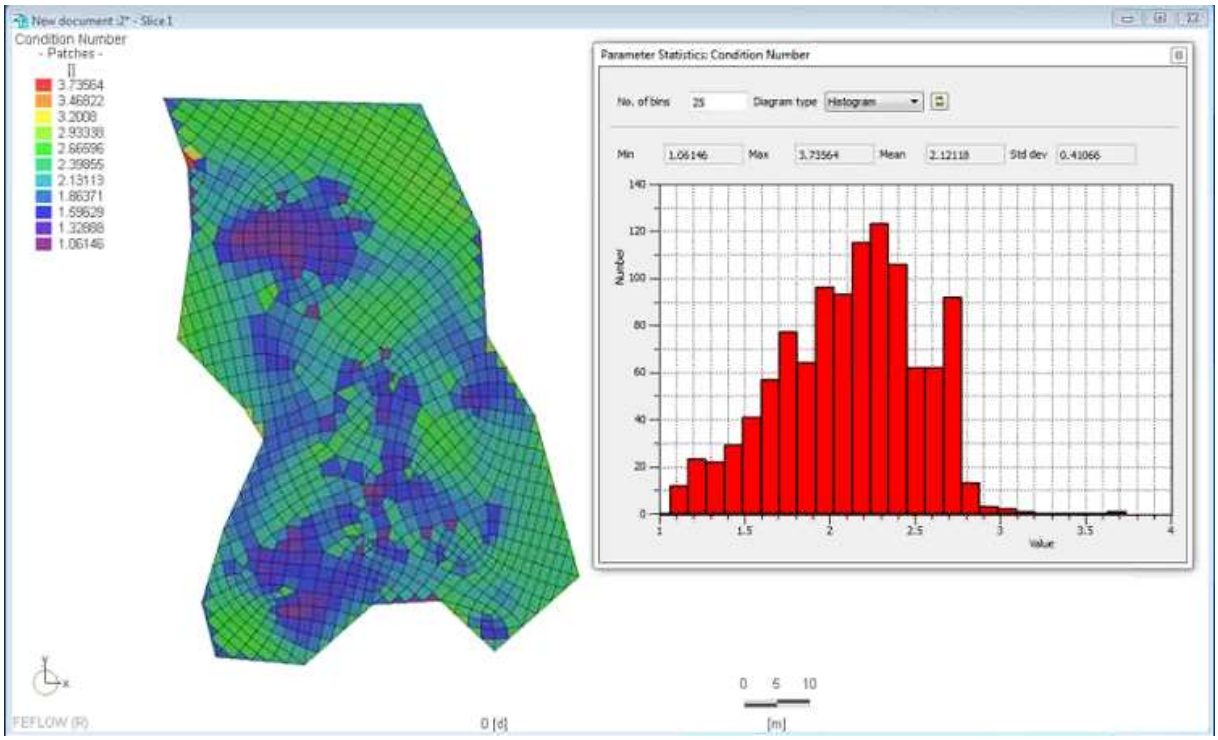

*Two times faster than the Galerkin method, but above all more stable and robust solution for unsaturated conditions*

### Anisotropic Macro-Dispersion

In some natural settings dispersivity not only depends on the flow direction, but also the bedding direction. FEFLOW can now consider both dependencies.

### Parameter Statistics and GUI Improvements

Descriptive statistics may be calculated and graphically displayed for all parameters, either for a subset or the entire mesh. Options to display Péclet and Courant numbers, Conditions Number and density.




*Descriptive Statistics*