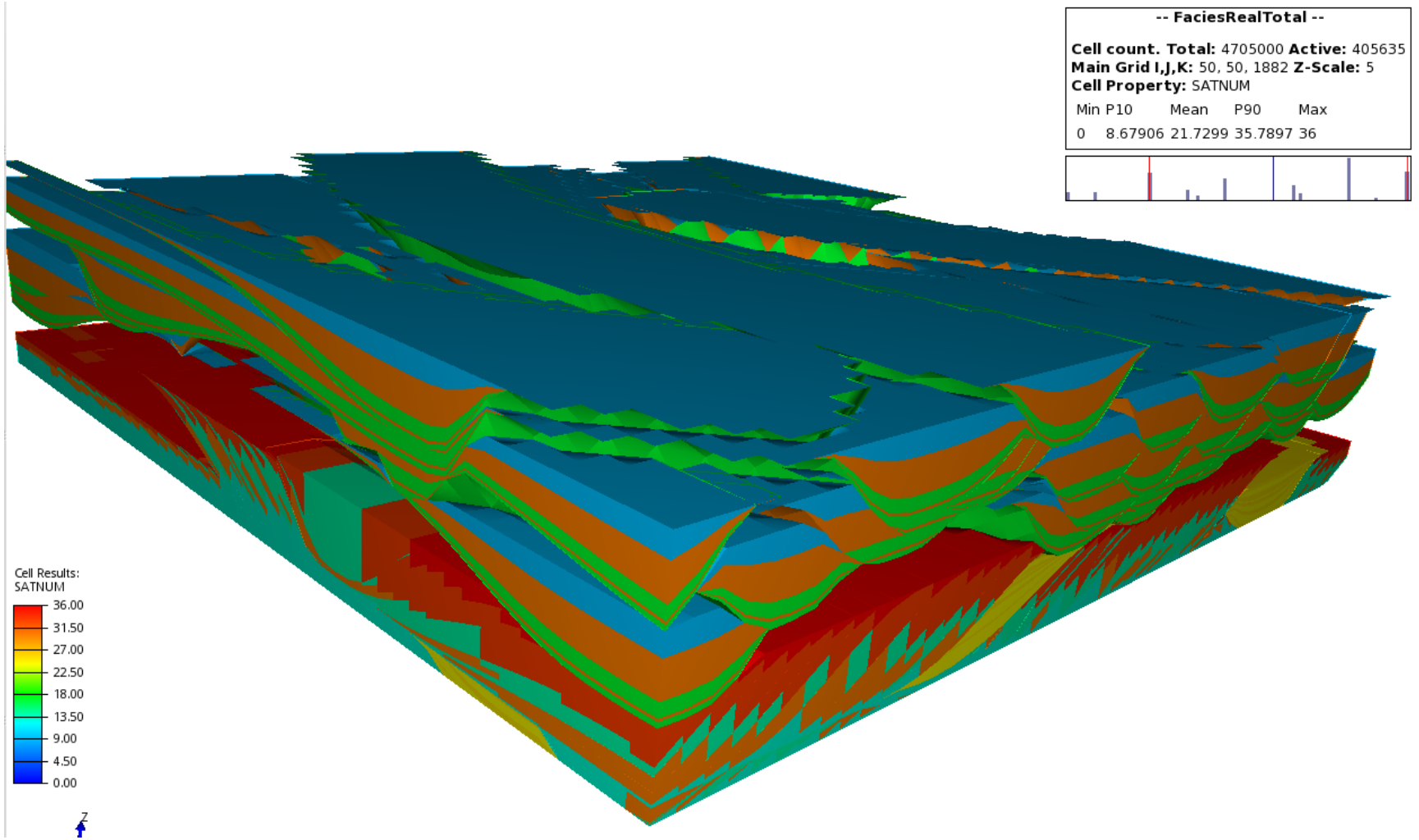
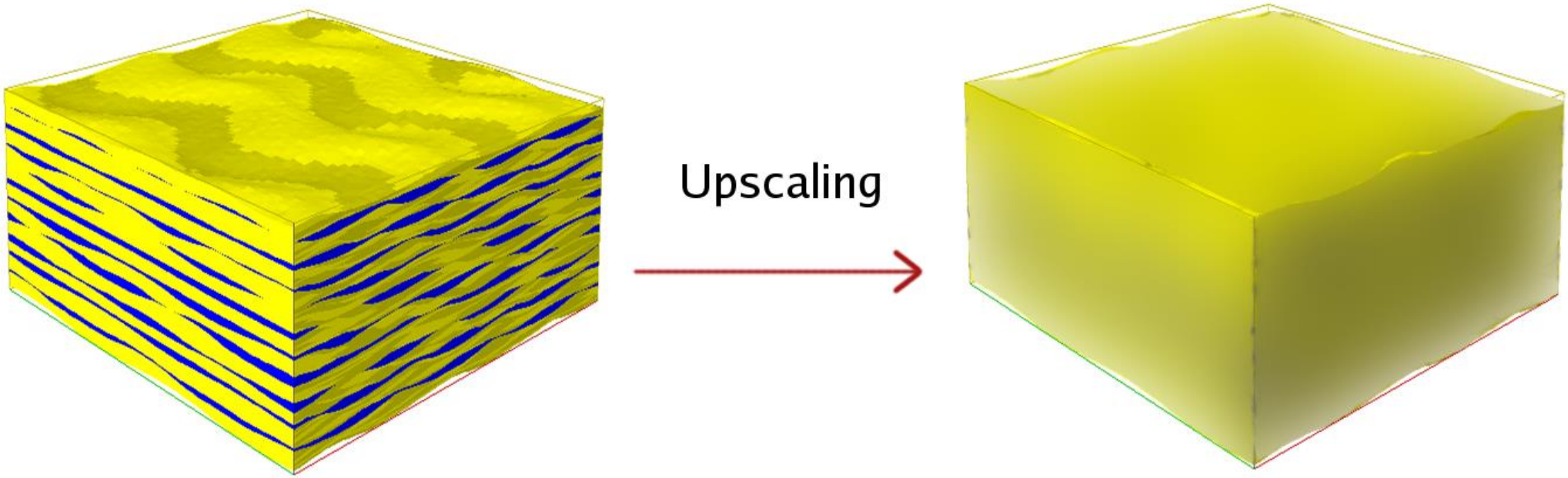
Current status and overview

History – why open source?



Overview – a brief walk-through

Upscaling – still there, still comprehensive



Heteorogeneous model,
homogeneous and isotropic cells

Homogeneous one-cell model,
anisotropic

Fracturing wells – on it's way

OpenDect – application shows potential

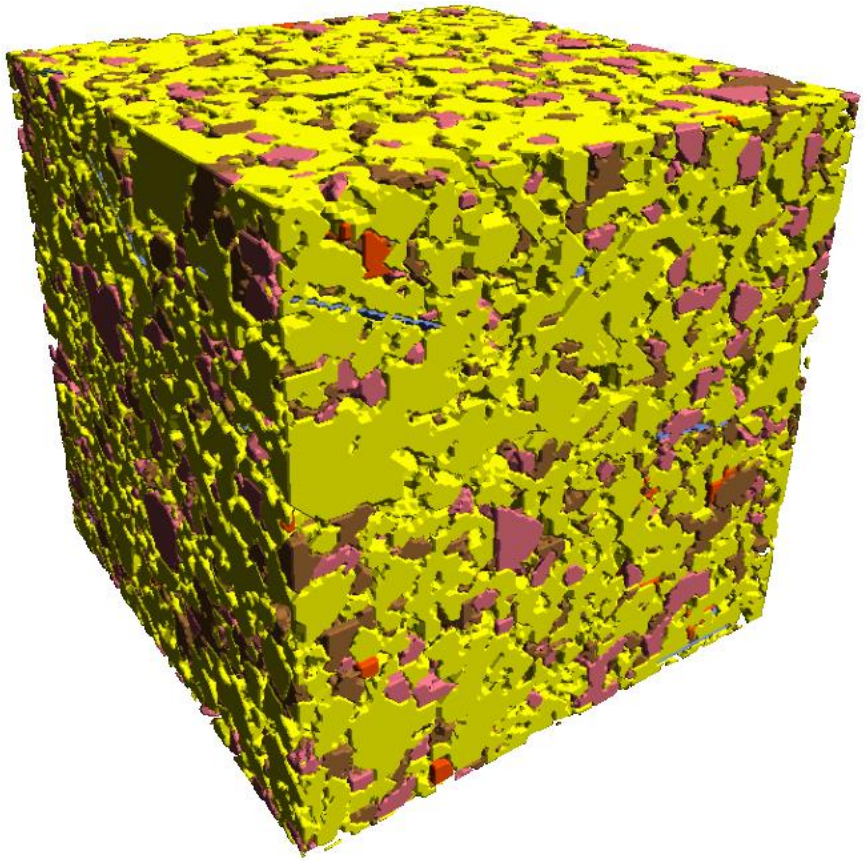
3D Core simulation tool based on CT-images

Structure

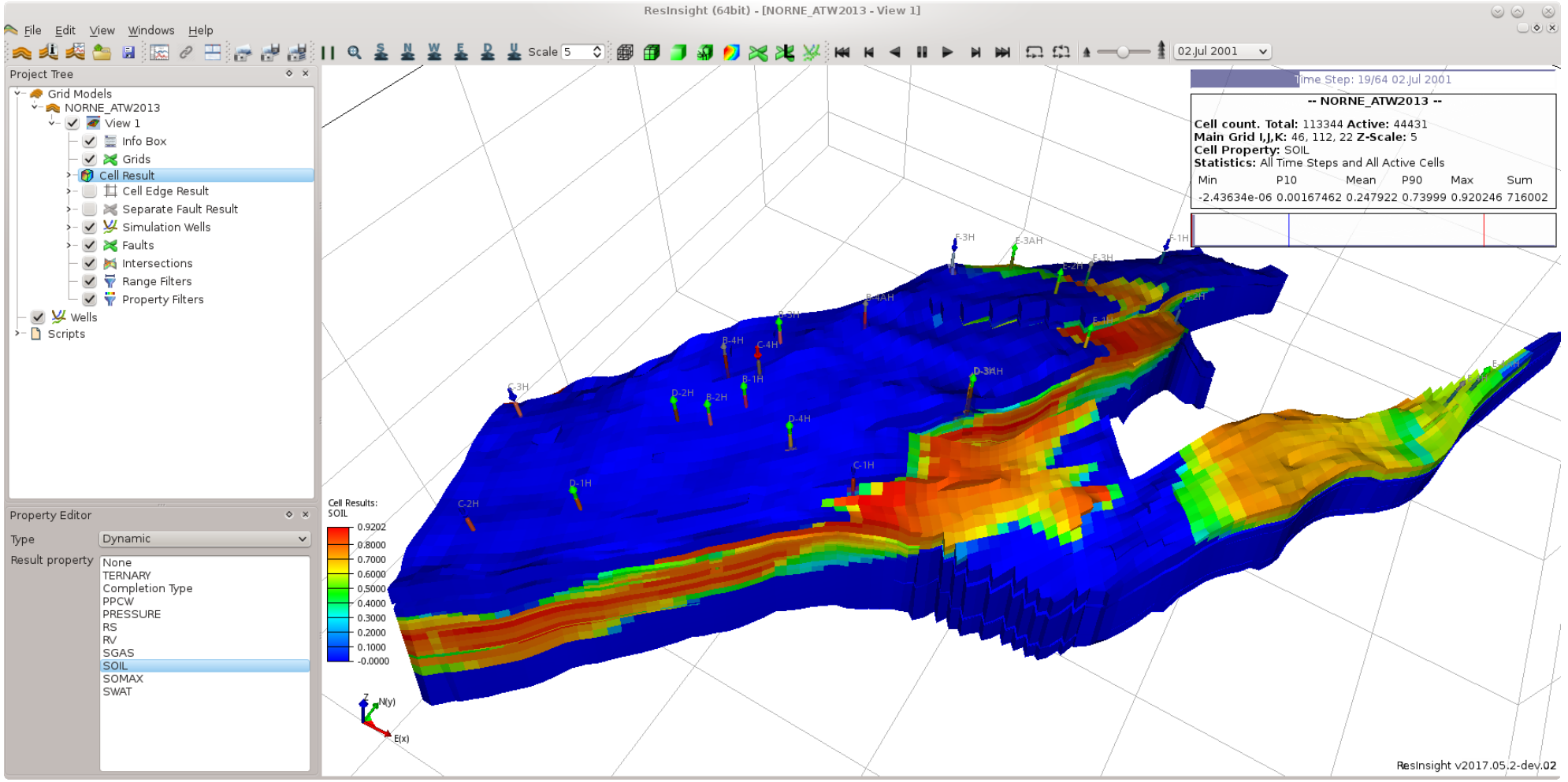
Here are described the major steps in the code:

1. Read CT scan DICOM file using the pydicom library
2. Select an area of interest, typically where rock samples were taken for core analysis.
3. The porosity, density and photoelectric factor are derived for each pixel in this region.
4. A 3D grid model is built based on upscaled porosity from the CT scan. Permeability is user-defined or picked from a trend.
5. The flowing experiment is chosen and an eclipse file is run using OPM Flow
6. The relative permeabilities are history-matched using Swarm algorithm (possibly ERT Ensemble at some stage)

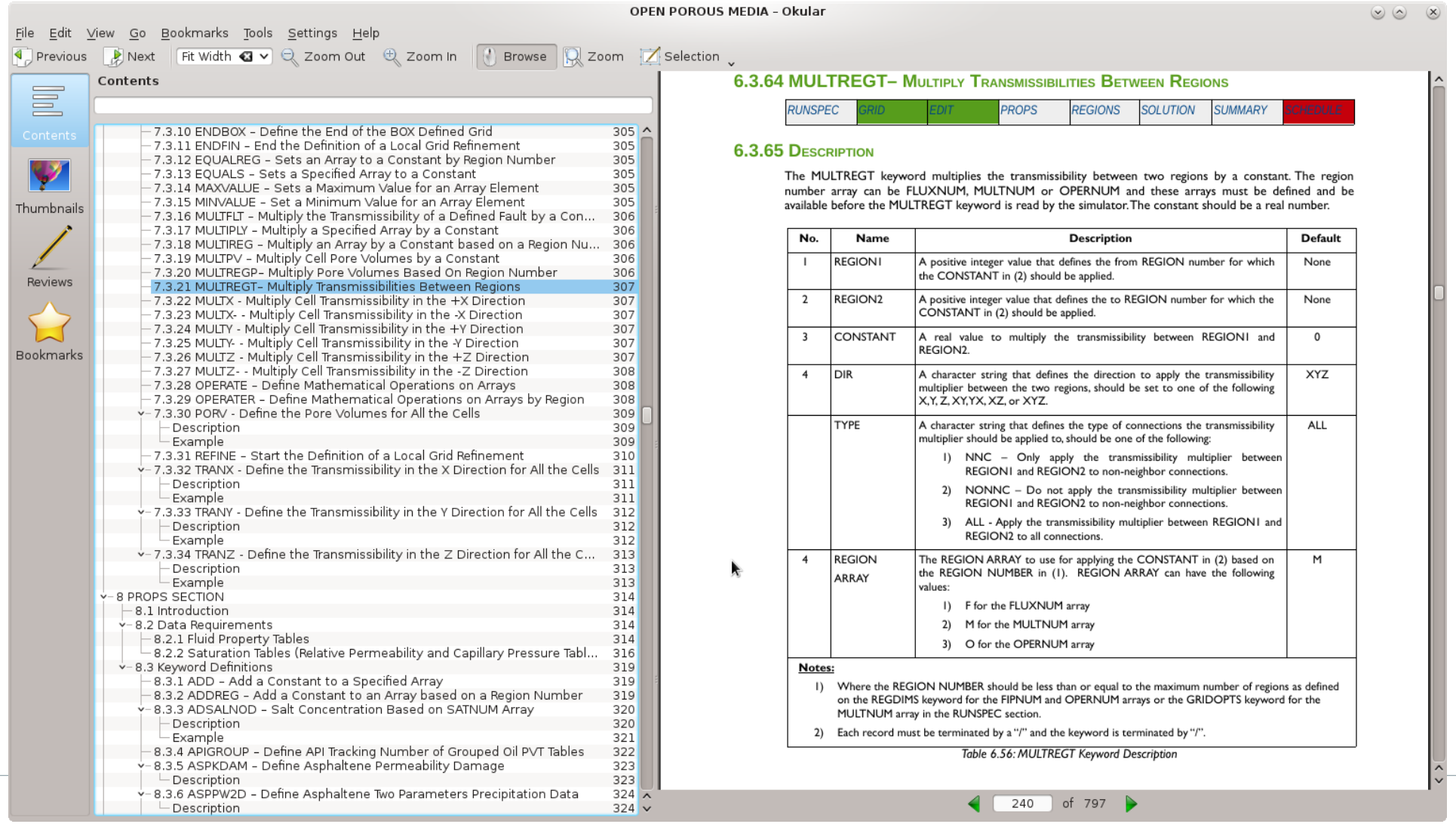
Pore scale modelling - new kid on the block



ResInsight – conquering the world

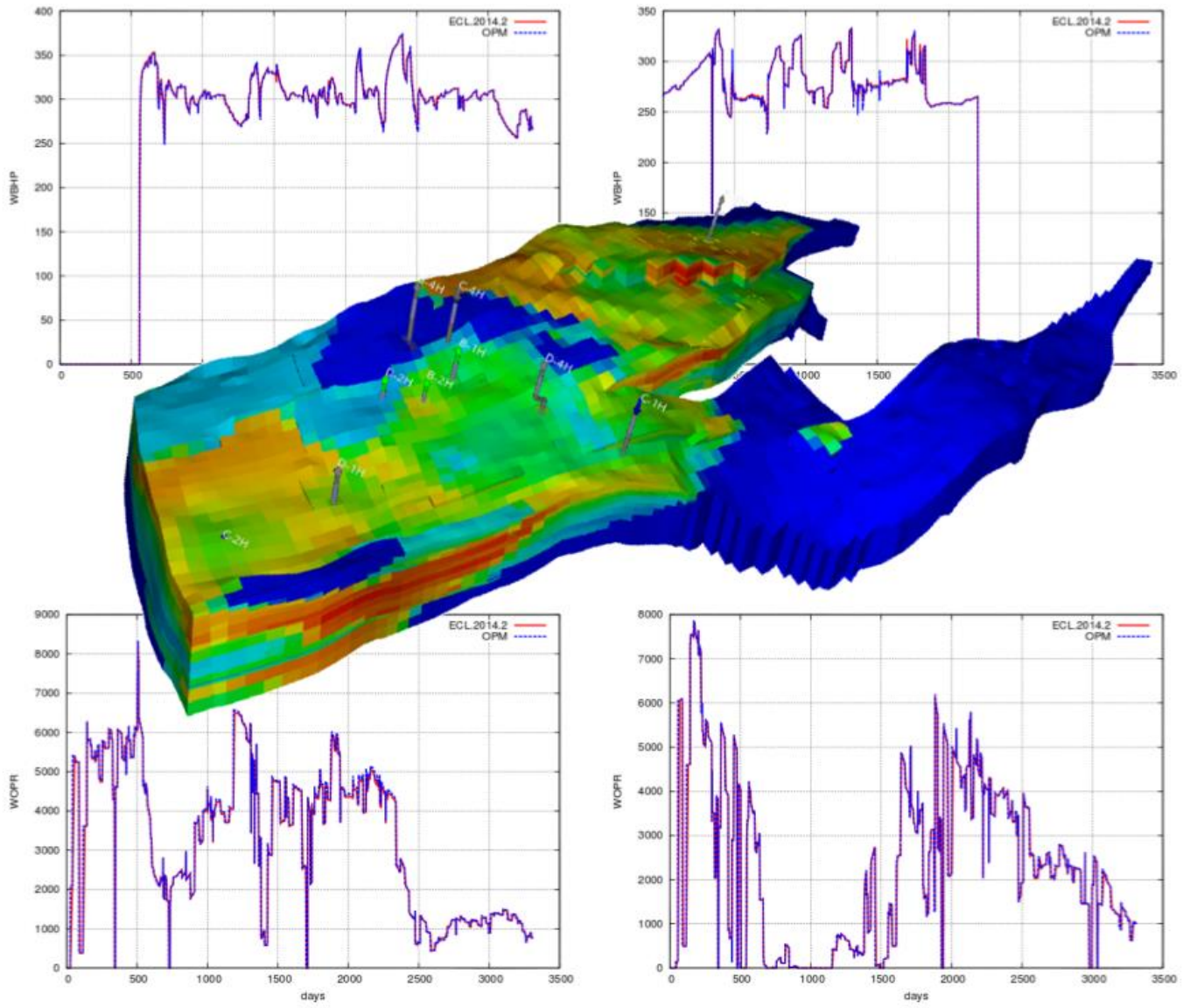


Flow – last but not least



Flow – major achievements

- Drop-in replacement
- Leading performance
- Competitive scaling
- Large and quickly growing feature set
- Unique CO2EOR implementation
- Polymer is still there



Flow – what is missing now?

- Robust test-framework
- Lots of basic functionality
- Debugging
- Robust scaling
- Technical documentation