Challenges in reservoir simulation

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Drainage strategy decisions
IOR and EOR quantification challenge
Collaboration necessary
OPM – empowering users and researchers

The Open Porous Media Initiative

OPM in a nutshell

The Open Porous Media (OPM) initiative provides a set of open-source tools centered around the simulation of flow and transport of fluids in porous media. The goal of the initiative is to establish a sustainable environment for the development of an efficient and well-maintained software suite based on the following principles:

- All OPM modules are free software available under the terms of the GNU General Public License (GPL) version 3.
- OPM strives to use an open development model. This means that anyone can contribute on equal grounds:
  - All source-code is hosted on public repositories on github.
  - All developer infrastructure (e.g., mailing lists, bug tracking system, wiki) is open to the general public.
- OPM aims to be useful for applications in many industrially relevant fields including CO2 storage, environmental engineering, and reservoir engineering.
- OPM also tries to be easy to extend with new functionality; for this reason most OPM modules use the DUNE C++ template library to achieve good computational performance while keeping the code as easy to understand and to maintain as possible.

Currently, OPM development is focused on oil reservoir engineering, enhanced oil recovery and CO2 sequestration, although contributions aimed at different fields are always welcome.

Latest News

Slides from the OPM workshop in Trondheim

The OPM workshop in Trondheim has been concluded successfully with many fruitful discussions and presentations on technical and non-technical matters. Thanks goes to everyone involved. The slides of the technical presentations are also available for download:

- Markus Blatt: Parallel CPR-Preconditioner in OPM
- Jørgen Kvamsvik: OPM and PETSc
- Andreas Lauser: Localized Linearization
Current status - upscaling

Heterogeneous model, homogeneous and isotropic cells

Upscaling

Homogeneous one-cell model, anisotropic
Current status - Resinsight
Current status – Black oil simulator

- SPE 1
- SPE 3
- SPE 9
- Norne Full field model
Current status – Fully compositional simulator
Disclaimer: Predictions are usually wrong
There’s never been a better time for good ideas