COMPUTER MODELLING GROUP LTD.

IMEX

Three-Phase, Black Oil Reservoir Simulator

Benefits

- Quickly screen various recovery mechanisms before moving to more complex simulations
- Model complex hydraulic fracture networks, and all associated effects, to accurately history match field results
- Accurate modelling of the matrix-fracture transfer in fractured reservoirs
- Fast and easy transition to EOR process modelling in GEM™ and STARS™
- Seamless integration with CMOST™ for rapid history matching and optimization of reservoir management workflows

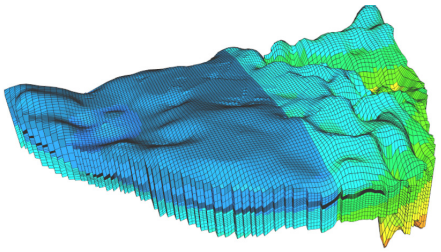
New Features

- Quickly load large IMEX files with the new standardized SR3 file format
- Model steady and unsteady state centrifuge flow experiments
- Threshold pressure enables realistic modelling of reservoir conditions and increased prediction accuracy

IMEX™, the world's fastest black oil reservoir simulator, is used to model primary and secondary oil recovery processes in conventional and unconventional reservoirs. Use IMEX for screening prospects, setting up pilot designs, monitoring and optimizing field operations, and improving production performance. Regardless of the size or the complexity of the reservoir, IMEX is an effective tool for a broad range of reservoir modelling and management issues.

Conventional Reservoirs

IMEX models simple to structurally complex, heterogeneous, faulted oil and gas reservoirs, using as many grid blocks as required to accurately represent the geological characteristics of the reservoir without compromising the certainty or reliability of the production forecasts. Apply either the default implicit/explicit method or the fully implicit method for faster calculations and to minimize run times without sacrificing credibility.



Threshold pressure provides a more accurate representation of the reservoir's geology and fluid flow

- Model different types of reservoir fluids, including: under-saturated and saturated oils, volatile oils, gas condensates, dry and wet gas reservoir fluid systems
- Select from multiple gridding options (Cartesian, radial, areal orthogonal & fully non-orthogonal corner point grids) to best capture the resolution required for the simulation model
- Model naturally fractured reservoirs and gravity segregation processes using IMEX's multiple dual continuum options
- Seamlessly interface with CMOST to facilitate rapid history matching and optimization of reservoir management workflows

Unconventional Reservoirs

IMEX incorporates sophisticated Logarithmically-Spaced, Locally-Refined (LS-LR) grids to model hydraulically fractured, naturally fractured shale/tight reservoirs accurately and efficiently. Users can select many different fracture models which allow for gravity, re-imbibition, and transient effects, providing accurate simulation of fluid transfer in a naturally fractured reservoir system.

- Ability to model longitudinal or transverse bi-wing hydraulic fractures and complex hydraulic fracture networks through a stimulated reservoir volume (SRV)
- Import third-party hydraulic fracture simulation data for better propped fracture characterization, history matching and forecasting
- Model variation in permeability along the length of the fracture to more realistically capture field conditions
- Accurately model the matrix-fracture and matrix-matrix transfer in naturally fractured reservoirs
- Utilize various correlations to capture the effect of non-Darcy flow inside hydraulic fractures
- Ability to characterize geometry, shape and size of the SRV using microseismic data
- Achieve more reliable gas-in-place and reserves estimates by modelling adsorption gas contribution to production in shale and CBM reservoirs
- Use CMOST to optimize well and fracture spacing to increase production, NPV and EUR

IMEX

Secondary Oil Recovery

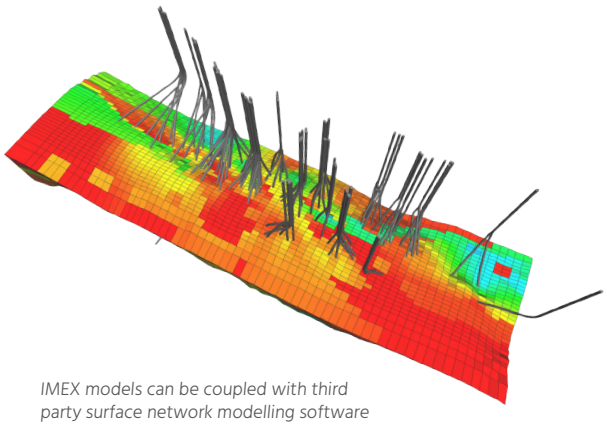
Evaluate new drilling locations and predict recovery for primary and secondary recovery methods in complex and heterogeneous reservoirs.

- Predict and compare reservoir performance by applying secondary recovery techniques such as water injection, polymer injection, pseudo-miscible gas injection, in continuous and WAG mode.
- Implement polymer related processes by modelling adsorption, polymer degredation, shear thinning and non-linear viscosity mixing
- Inject chase gas that has different properties than the solution gas

Coupled Surface Network Modelling

Create explicitly-coupled subsurface and surface network models, including onshore gas storage fields and deep water offshore oil and gas fields.

- Couple to third-party surface network simulators to model more complex (e.g. looped) surface networks
- Coupled system modelling allows engineers to trouble-shoot bottlenecks in the entire reservoir and surface network system



IMEX models can be coupled with third party surface network modelling software for simultaneous modelling of both the reservoir and surface network.

iSegWell

iSegWell, an intelligent segmented wells module in IMEX, accurately and realistically models the flow and pressure change throughout the wellbore branches, tubing strings and equipment. Engineers are able to optimize well completions and downhole equipment using iSegWell.

- Wellbore modelling for gravity and frictional pressure losses (horizontal & multi-lateral wells, downhole equipment, tubing)
- Define and use non-standard flow control devices (FCDs) to optimize injection and production strategy

Performance

CMG's solver and parallelization technology maximizes hardware potential and provides you with software that runs large, complex simulation jobs in the shortest amount of time.

- Decrease project turn-around time
- Run more simulation jobs simultaneously and get results faster than before
- Additional parallelization increases parallel speed-up when jobs are submitted on a higher number of cores
- Reduce capital expenditures with efficient use of IT computer hardware
- Quickly load results of large models using the new standardized and compressed SR3 files to maximize productivity

Contact

For more information please contact
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R&D Investment

CMG reinvests 20% annual revenue back into R&D, to further innovation and drive technology forward

Superior Software

CMG delivers easy to use software that provides the most accurate results

Dedicated Support

Experienced technical sales & support personnel, deliver high-quality, timely and personalized customer support

Relevant Training

CMG's industry renowned reservoir software training provides the skills to improve productivity and efficiency