



THE DIGITAL CORE ANALYSIS LAB

DigitalROCK® uses digital imaging and simulation to measure important rock properties accurately and efficiently. Multi-phase relative permeability and capillary pressure results are available in days instead of waiting months for physical lab testing. Faster access to more data reduces uncertainties, improves reservoir modeling, and informs key field planning and engineering decisions.

PROVEN TECHNOLOGY

Powered by SIMULIA's best-in-class Lattice-Boltzmann physics, DigitalROCK provides the first reliable, predictive technology for digital pore-scale simulation of relative permeability. The ability to accurately simulate two-phase flow, such as oil and water, through reservoir rock was co-developed and extensively validated during a three-year partnership with BP.

UNMATCHED USER EXPERIENCE

Available as a web-based application on the cloud, the streamlined DigitalROCK workflow goes from image to results easily and efficiently, enabling unprecedented access to reservoir rock data for the geoscientists and reservoir engineers who need it. The user interface is easy and intuitive, and cloud delivery avoids infrastructure, hardware, and IT issues to minimize up-front expenses.

PROCESS EFFICIENCY

This digital approach dramatically reduces cycle times, enabling sensitivity and what-if studies to more fully assess how specific rock and fluid system properties influence results. This is especially useful for evaluating the potential of EOR methods, providing quality assurance for existing lab test data, and bounding the uncertainties associated with variables such as wettability. Use DigitalROCK to develop a digital catalog of rock data - accessible anywhere - without the risk of degradation that can happen with physical core samples.

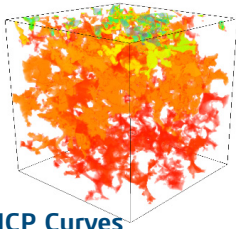
FEATURES AND BENEFITS OF SIMULIA DIGITALROCK

Leveraging highly scalable, high-performance computing, and patented flow simulation technology, DigitalROCK offers:

- Accurate two-phase relative permeability and capillary pressure results – available in days
- MICP and absolute permeabilities in hours
- Multi-directional (X,Y,Z) analysis and porosity-permeability trends
- Streamlined process with intuitive UI usable by anyone
- Easy collaboration across teams via shared digital library of images and results
- Easily re-run any digital test with modified conditions to isolate the effects of various properties
- Quickly access results for analysis or download
- Dramatically improve analysis time, consistency and reproducibility of essential rock properties

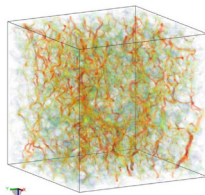
BREAKTHROUGH ROCK PROPERTY ANALYSIS

The fastest path from rock to results, the DigitalROCK approach starts by imaging a sample of whole core, sidewall/rotary core, or even cuttings. After uploading the image and running selected analyses, navigate easily through the results to see computed petrophysical properties and 3D visualizations:



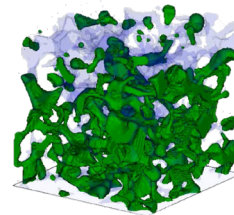
MICP Curves

Digital version of standard test essential for core analysis.



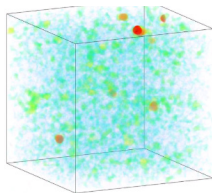
Absolute Permeability

Evaluate porosity-permeability trend; perform multi-directional analysis to evaluate anisotropy.



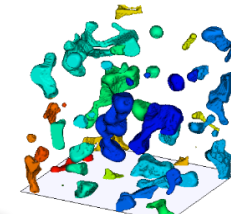
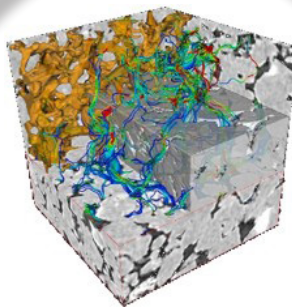
Relative Permeability

Key reservoir model input characterizing multi-phase flow; indicates residual (trapped) oil.



Pore Space Analysis

Porosity, connected porosity, and pore size distribution.



Capillary Desaturation

Reveals flow conditions required for secondary or tertiary oil recovery.

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