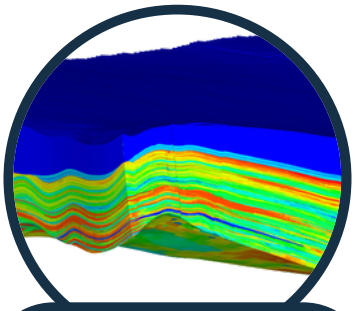
tNavigator®

Rock Flow Dynamics

CARBON CAPTURE AND STORAGE

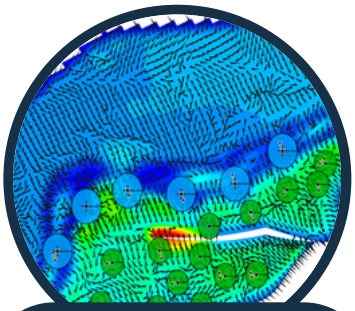
RFDYN.COM/NEW-ENERGY

We understand that there are a lot of questions that come with your CCUS projects and you need to determine how best to assess the feasibility and success that a project may have. With tNavigator's integrated approach, we allow geoscience and engineering teams to collaborate more closely and leverage their individual expertise to achieve a robust understanding of their CO2 storage projects, and help answer these questions.



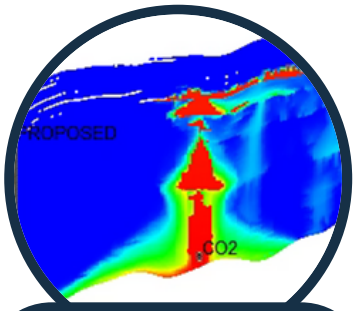
GEOLOGICAL FEASIBILITY

- How much carbon can be stored?
- What are the storage mechanisms that are likely to play a role and what is the contribution of each?



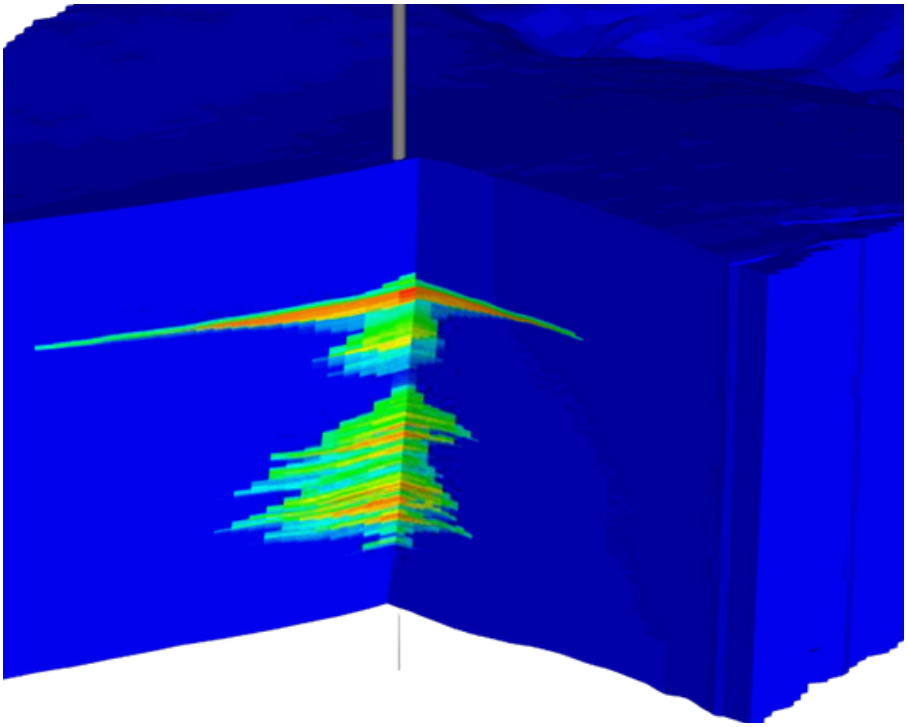
OPERATIONAL FEASIBILITY

- What are the operational and safety limits that dictate the injectivity of CO2?
- Are there other possible constraints?



RISK ASSESSMENT

- Can we assess the formation integrity?
- Is there a chance for migration or leakage?
- Will there be crossflow into abandoned wells?



TRAPPING MECHANISMS

Model all major CCUS mechanisms within tNavigator, and assess the contribution of each over time.

Structural trapping with geomechanics:
model free movement of buoyant CO2 trapped by caprock

Residual saturation trapping:
model CO2 trapped in pores due to capillary pressure

Dissolution trapping:
model CO2 dissolved in saline fluid

Mineralization trapping:
model how saline fluid containing dissolved CO2 reacts with surrounding rock and mineralizes

STATIC MODELLING

From grid construction, to seismic well tie and domain conversion, to structural and property modelling -- tNavigator's Geology Designer is primed and ready to help you build your geological model and assess your storage capacity and risk in your CCUS projects.

FULLY IMPLICIT GEOMECHANICS

tNavigator uses a joint system of coupled equations to calculate reservoir fluid flow and geomechanical effects simultaneously. Our coupled geomechanics allows you to accurately model caprock failure, and evaluate risks during CCS location screening process

INTEGRATED ASSET MODELLING

tNavigator offers a powerful engineering tool for field development planning and optimization, allowing you to incorporate all elements of the field (reservoir, wells, and surface facilities) into one project and calculate the system of equations fully implicitly.

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