Subsurface Systems Modeling Webinar Series
An initiative by the *EAGE Technical Community on Basin and Petroleum Systems Analysis.*

- Webinar focuses on the analysis of petroleum systems and new energy topics, showcasing applications and technology developed by industry and academia.

Schedule:

- Webinar will be held every two months or quarterly and is organized by committee members of the EAGE Community of Basin & Petroleum Systems Analysis. Schedule can be found online.

Topics of Upcoming Events:

- Gas kinetics, petroleum system, hydrogen, geothermal, heat flow, CCUS, pressure modeling, mineral systems

Summary of the session *'Introduction to the Subsurface Systems Modeling webinar series'* held on 24 April 2025:

- Basin and petroleum systems analysis is accepted in industry as a valid method to predict temperature & pressure and dependent properties away from well control.

- Basin models can be used to learn about correlations and dependencies in a natural system.

- The basin modeling approach focuses on geological processes over millions of years and the structural development of basins combined with geochemical reactions and fluid flow to understand petroleum, water, gases, mineral or other natural systems.

- The technology has developed over the last 40 years with generations of geochemical, geological, geomechanical and physical concepts and numerical modeling tools.

- Multiple resource applications are possible including oil and gas, hydrates, hydrogen, geothermal and more

- Key to basin modeling success is the ability to predict pressure and temperature at present day and throughout the geological history, which can be paired with geochemical reaction kinetics, followed by a fluid flow modeling simulator.

Webinar: Introduction to the Subsurface Systems Modeling webinar series
EAGE Technical Community on Basin and Petroleum Systems Analysis
24 April 2025, Online

- A key challenge in subsurface systems modeling is data availability to be used as input to models and for calibration. The lack of such data typically comes with large uncertainties for estimates and risk analysis.

- Fit for purpose approaches are commonly discussed to optimize performance without sacrificing quality and accuracy of results.

- AI methods may help to define model input from large data sets but also to condition model output and can be used to identify proxies, correlations, and patterns.

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