

Presentation Schedule



Monday, August 1st

- 10:05 - 10:35** Overview of Geoscience Driven Fracture Geomechanics for completion and reservoir engineering optimization
- 11:00 - 11:30** FracPredictor software and **Niobrara** case study: geosteering in the Niobrara guided by seismically driven geologic and fracture modeling
- 01:30 - 02:00** FracPredictor software and **Eagle Ford** case study: geologically and geomechanically constrained frac design and reservoir simulation
- 02:30 - 03:00** Wolfcamp case study - From seismic gathers to adaptive fracturing parameters: optimizing **Wolfcamp** well and frac stage spacing to avoid frac hits
- 03:10 - 03:40** FracPredictor software and **Niobrara** case study: geosteering in the Niobrara guided by seismically driven geologic and fracture modeling
- 05:05 - 05:35** FracPredictor Software and **Eagle Ford** case study: geologically and geomechanically constrained frac design and reservoir simulation
- 06:00 - 06:30** LMKR Plug-In - **LMKR** Software and Niobrara case study for optimal horizontal well planning guided by enhanced colored inversion

Tuesday, August 2nd

- 09:30 - 10:00** Overview of Geoscience Driven Fracture Geomechanics for completion and reservoir engineering optimization
- 10:15 - 10:45** FracPredictor software and **Niobrara** case study: geosteering in the Niobrara guided by seismically driven geologic and fracture modeling
- 11:00 - 11:30** FracPredictor software and **Eagle Ford** case study: geologically and geomechanically constrained frac design and reservoir simulation
- 01:30 - 02:00** Wolfcamp case study - From seismic gathers to adaptive fracturing parameters: optimizing **Wolfcamp** well and frac stage spacing to avoid frac hits
- 02:30 - 03:00** FracPredictor software and **Niobrara** case study: geosteering in the Niobrara guided by seismically driven geologic and fracture modeling
- 03:10 - 03:40** Overview of Geoscience Driven Fracture Geomechanics for completion and reservoir engineering optimization
- 05:05 - 05:35** **Earthquakes & Social License** - Geomechanical Tools to Bolster Social License: Quantifying the Mechanical Effects of Faults on Induced Seismicity Potential, paper URTEC 2447633

Wednesday, August 3rd

- 09:30 - 10:00** Overview of Geoscience Driven Fracture Geomechanics for completion and reservoir engineering optimization
- 10:15 - 10:45** FracPredictor software and **Eagle Ford** case study: geologically and geomechanically constrained frac design and reservoir simulation
- 11:00 - 11:30** FracPredictor software and **Niobrara** case study: geosteering in the Niobrara guided by seismically driven geologic and fracture modeling



Presentations Summary

Overview: Geoscience Driven Fracture Geomechanics for completion and reservoir engineering optimization

An overview of the new technologies that will enable E&P companies to rebound in Shale 2.0 through the integration of geophysics, geology and geomechanics to allow the execution of adaptive fracturing to achieve the highest number of successful frac stages and optimal well spacing.

FracPredictor software and Niobrara case study: geosteering in the Niobrara guided by seismically driven geologic and fracture modeling

Standard seismic is used to derive a new generation of seismic attributes that provide new geologic insights on the faults, and key rock properties such as brittleness and how they could be used to generate validated geologic and Continuous Fracture Models (CFM). The workflow is illustrated in a Niobrara case study where the fracture model is validated with mud logs and cuttings from a recently drilled horizontal well.

FracPredictor software and Eagle Ford case study: geologically and geomechanically constrained frac design and reservoir simulation

FracGeo's 3G workflow, in which the geomechanical results of hydraulic fracturing are validated with microseismicity and used to generate the asymmetric half-length of each cluster in each frac stage, is demonstrated. The derived asymmetric half-lengths that capture frac complexity are used as a constraint in FracGeo's asymmetric frac design that provides the reason and remedies for each poor frac stage. The frac design results are exported easily to frac design and reservoir simulation software for further modeling and simulation.

Wolfcamp case study - From seismic gathers to adaptive fracturing parameters: optimizing Wolfcamp well and frac stage spacing to avoid frac hits

A Wolfcamp study is presented that describes FracGeo's 3G workflow and its application to minimize the impact of frac hits. Starting with seismic gathers, the key seismic attributes needed to build validated geologic and fracture models are computed. The geomechanical simulation helps define the half lengths used in FracGeo's asymmetric frac design. The economic impact of FracGeo's engineered and adaptive completion design is compared to the "Copy & Paste" approach traditionally used.

Earthquakes & Social License

A unique FracGeo geomechanical workflow that leads to predictive Induced Seismicity Potential (ISP) is demonstrated. These maps provide simple tools that allow E&P companies, regulators and insurance companies to decide where to allow water disposal wells in order to avoid earthquakes. URTeC 244763 presented on August 2 at 1:50 PM at Session Theme 8: HSSE Practices and Operations - Room 302 C.

LMKR Plug-In

A sneak-peek at the Enhanced Colored Inversion LMKR plugin powered by FracGeo Technologies. Various LMKR tools will be used to optimize the well planning to target brittle zones. PRIZM will be used to derive the relationship between impedance and brittleness, SeisVision will be used for the seismic interpretation, and the enhanced colored inversion will be used to derive the impedance and brittleness cube which will be used in SmartSection to select the optimal landing zone and frac stages.