Fracture Studies

- Carbonate Rocks
- Mudstones
- Tight Gas Sandstones

Fracture Research and Application Consortium

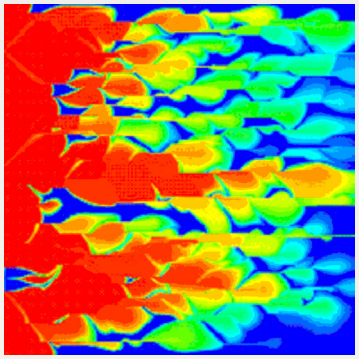
Mission

Natural fracture research at The University of Texas at Austin seeks fundamental understanding of fractures and fracture processes with the aim of finding new geological, geophysical, and engineering methods to explain and successfully predict, characterize, and simulate reservoir-scale structures.

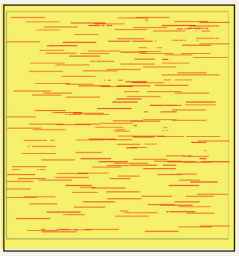
The purpose of this research is both fundamental and practical—to improve prediction and diagnosis of natural-fracture attributes in hydrocarbon reservoirs and accurately simulate their influence on production. Research is organized around the Fracture Research and Application Consortium (FRAC), an alliance of scientists from BEG and the departments of Petroleum and Geosystems Engineering and Geological Sciences, together with scientists from member companies. Student participation is an important part of our program. Many students find placement with member companies.

Impact

Flow simulation



Joints software for fracture modeling and permeability estimation



More accurate prediction and characterization of fractures hold great potential for improving production by increasing the success and efficiency of exploration and recovery processes. New analytical methods will lead to more realistic characterization and prediction of fractured and faulted hydrocarbon-bearing carbonate, mudstone, and sandstone reservoir rocks. These methods produce data that can enhance well-test and seismic interpretations and that can readily be used in reservoir simulators. Members have exclusive access to our **Joints** software for fracture pattern prediction and permeability estimation.

Challenge

Many faults and fractures are difficult or impossible to characterize adequately using currently available technology. Fractures have been intractable to effective description and interpretation, posing serious challenges to exploration and development, as well as accurate reservoir simulation and reservoir management. Our approach is helping to overcome the limitations of current methods.