Advanced Geomechanics for Oil & Gas and Emerging Energy Applications

Geomechanics plays a crucial role in optimizing oil and gas production while ensuring operational safety and sustainability. By integrating multi-scale numerical modelling, laboratory experiments, and field data, geomechanics enhances our understanding of reservoir behaviour, wellbore stability, sand production, hydraulic fracturing, and fault reactivation. Geomechanics is evolving to address emerging energy applications such as geothermal energy, underground hydrogen storage, and carbon capture and storage (CCS), where subsurface stress changes and long-term integrity are key challenges. As energy transition accelerates, geomechanics remains essential for mitigating risks, improving efficiency, and enabling sustainable resource development.

Biography:

Assef Mohamad-Hussein is Geomechanics Principal at SLB. He is the Head Quarters Interpretation & Geomechanics Lead, managing and leading the Geomechanics Center of Excellence in the United Kingdom.