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“Some Challenges in Modeling Drilling Geomechanics in Complex Reservoirs”

Abstract:

As oil and gas exploration begins to tap complex reservoirs such as those in deep water subsalt plays or complex tectonic stress domains, or in unconventional assets such as oil shale, challenges and opportunities in cost control are presented. These can be mitigated by the application of optimal technology and the use of advanced management processes. Drilling wells in complex geologic environments can bring unpleasant surprises unless a very thorough geomechanics study is carried out for the reservoir condition and the proposed well trajectory. Three case studies are presented to illustrate the challenges in estimating subsalt wellbore stability, tectonic in-situ stress condition and rock properties.