

Extracting the Failure Criterion to Evaluate the Strength of Cracked Drills under Torque Caused by Drilling

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Abstract : The destruction and defeat of drill pipes and drill rigs in oil wells often combined with a combination of shear modulus II and III. In such a situation, the strength and load bearing capacity of the drill are evaluated based on the principles of fracture mechanics and crack growth criteria. In this paper, using the three-dimensional stress equations around the Turkish frontier, the relations of the tense-tense criterion (MTS) are extracted for the loading of the combined II and III modulus. It is shown that in crisp deflection under loading of combination II and III, the level of fracture is characterized by two different angles: the longitudinal angle of deflection θ and the angle of the deflection of the alpha. Based on the relationships obtained from the MTS criterion, the failure criteria, the longitudinal angle of the theta failure and the lateral angle of the failure of the alpha are presented. Also, the role of Poisson's coefficient on these parameters is investigated in these graphs.

Keywords : most tangential tension criterion, longitudinal angle of failure, side angle of fracture, drills crack

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