

عنوان مقاله:

A comparison between critical wellbore pressures using different rock failure criteria

محل انتشار:

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خلاصه مقاله:

Borehole collapse is a commonly encountered wellbore stability problem during drilling. Borehole failures can be reduced by determining the proper mud pressure based on the selection of an appropriate rock failure criterion. Several linear elastic constitutive models have been tested to predict borehole collapse pressure. The fore most used criterion for brittle failure of rocks is the Mohr-Coulomb, Mogi-Coulomb and Modified Lade. Compared to the other two failure criteria, the Mohr-Coulomb is conservative as it predict higher well collapse pressure than the other two criteria, i.e. the Modified Lade and the Mogi-Coulomb. On the other hand, the latter provides very optimistic predictions that are significantly below predictions given by the other two criteria. The collapse pressure obtained using the modified Lade criterion is lower than the corresponding pressure obtained from the Mogi-Coulomb criterion. So, an excel program was prepared based on given algorithm in this paper and the effect of wellbore inclination and azimuth on .collapse pressure is also investigated

کلمات کلیدی:

Wellbore instability, Mohr-Coulomb, Modified Lade, Mogi-Coulomb, collapse pressure, underbalance

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