Fault_stability_Ruhr

The following data are provided for each column in the Fault_stability_Ruhr file:

1 – Location x; WGS 84 / UTM zone 32N (m)
2 – Location y; WGS 84 / UTM zone 32N (m)
3 – Location z; WGS 84 / UTM zone 32N (m)
4 – Shear stress resolved on an arbitrarily oriented fault plane (MPa); Values were recomputed according to Jaeger et al. (2007).
5 – Normal effective stress resolved on an arbitrarily oriented fault plane (MPa); Values were recomputed according to Jaeger et al. (2007).
6 – Coulomb Failure Function resolved on an arbitrarily oriented fault plane (MPa); Coulomb Failure Function (CFF) is a property indicating failure of an arbitrarily oriented fault plane. When CFF is negative, a fault is stable, as shear stress is insufficient to overcome the resistance to sliding. When CFF approaches zero, frictional sliding will occur on a pre-existing fault plane as there is sufficient shear stress to overcome the effective normal stress on a fault plane. Recomputed from Zoback (2007).
7 – Slip tendency resolved on an arbitrarily oriented fault plane (-); Slip tendency is the ratio of resolved shear stress to resolved normal stress on an arbitrarily oriented fault plane which relates to the tendency of a given fault to fail in shear mode. It is based on Amonton's law that governs fault reactivation. Recomputed from Morris et al. (1996).
8 – Dilation tendency resolved on an arbitrarily oriented fault plane (-); Dilation tendency describes the resolved effective normal stress normalized with the differential stress. This ratio indicates the likelihood of an arbitrarily oriented fault plane to dilate in the prevailing in-situ stress field. Recomputed from Ferill et al. (1999).

References

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