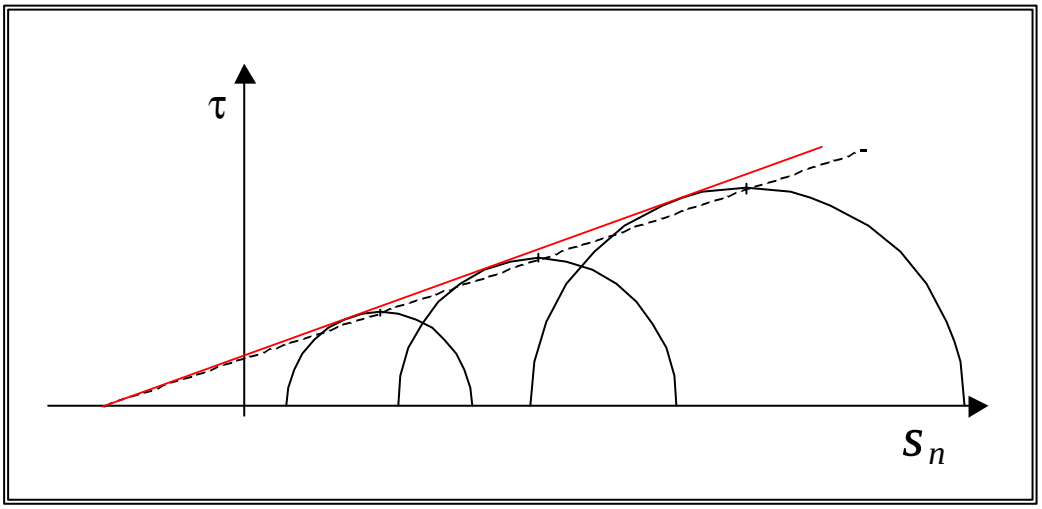
104 Helpsheets

GDS INSTRUMENTS LIMITED

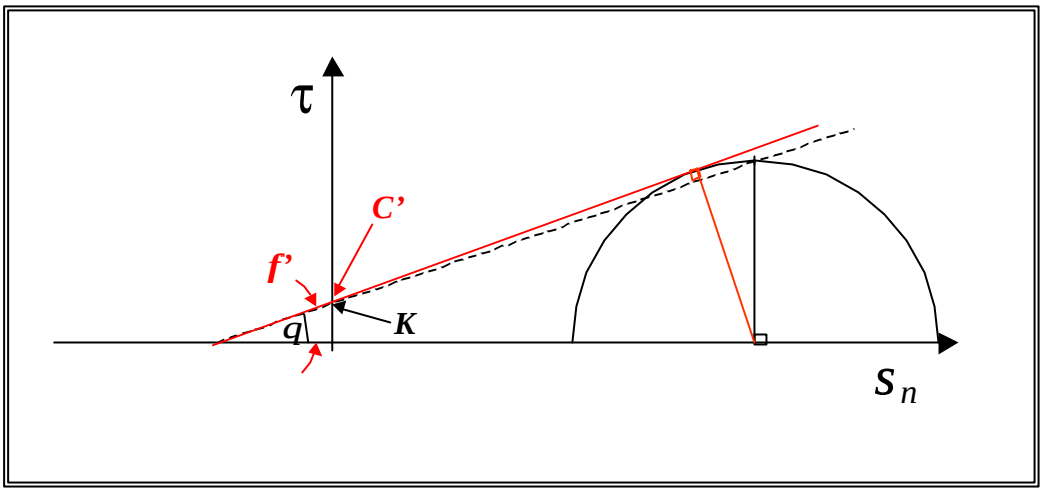
World Leaders in Computer Controlled Testing Systems for Geotechnical Engineers and Geologists

Hardware
Triaxial Testing Systems
The modified Failure Envelope
Calculating Cohesion and Internal Angle of Friction

The failure envelope is a common tangent to the Mohr's circles at failure for a number of specimens where f' is the angle (the internal angle of friction) and c' (cohesion) is the intercept. The line that passes through the maxima of all of the circles has a different form (q and k).



This line is called the MODIFIED FAILURE ENVELOPE. Let the slope be q and the intercept be k.



From this it maybe proved that:

$$\text{Sin } f' = \tan q$$

And

$$C' = K / \cos f'$$