



equilibrium equation is satisfied, provided that the function $u_\phi(r, z)$ is a solution of the partial differential equation

The boundary conditions can be written in the form

$$u_\phi(r, 0) = \alpha r, \quad 0 \leq r < a, \tag{3}$$

$$\sigma_{\phi z}(r, 0) = 0, \quad a < r < b, \tag{4}$$

$$\dots \tag{5}$$

where

$$F_1(w) = \int_0^a \frac{f_1(t) dt}{\sqrt{a^2 - t^2}} \quad 0 < w < a \quad (21)$$

$$F_2(w) = \int_b^w \frac{t^2 f_2(t) dt}{(w^2 - t^2)^{1/2}}, \quad b < w < \infty. \quad (22)$$

Regarding the right hand side of this equation as a known function of r , equation (20) is of an Abel type form. Hence, its solution can be written as

References

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