Mem. Differential Equations Math. Phys. 53 (2011), 163–164

CORRECTIONS

to the paper [M. A. Grekov and N. F. Morozov, Solution of the Kirsch Problem in View of Surface Stresses. *Mem. Differential Equations Math. Phys.* **52** (2011), 123–129]

The corresponding formulae from the published paper should be replaced by the following ones:

$$\sigma_{rr} + i\sigma_{r\theta} = \sigma^s_{\theta\theta} - i\,\frac{\partial \sigma^s_{\theta\theta}}{\partial\theta} \equiv t^s, \quad r = 1, \tag{3}$$

$$I^{\pm}(\zeta) = \pm\frac{\tau(\zeta)}{2} \pm \frac{\zeta\tau'(\zeta)}{2} + \frac{1}{2\pi i}\int\limits_{|\eta|=1} \frac{\tau(\eta) + \eta\tau'(\eta)}{\eta - \zeta}\,\eta, \tag{20}$$

$$\begin{gathered}[2r - M(\varkappa - 1)]\tau(\zeta) - M(\varkappa + 1)\times \\ \times\left[\frac{1}{2\pi i}\int\limits_{|\eta|=1} \frac{\tau(\eta) + \eta\tau'(\eta)}{\eta - \zeta}\,d\eta - \frac{1}{2\pi i}\int\limits_{|\eta|=1} \frac{\overline{\tau(\eta)} + \overline{\eta\tau'(\eta)}}{\bar\eta - \bar\zeta}\,d\bar\eta\right] = \\ = \frac{Mr(\varkappa + 1)}{2}\,\sigma\big(1 - \zeta^2 - \zeta^{-2}\big).\end{gathered} \tag{21}$$

$$\begin{gathered}[2r - M(\varkappa - 1)]\tau(\zeta) - M(\varkappa + 1)\times \\ \times\left[\frac{1}{2\pi i}\int\limits_{|\eta|=1} \frac{\tau(\eta) + \eta\tau'(\eta)}{\eta - \zeta}\,d\eta - \frac{\zeta}{2\pi i}\int\limits_{|\eta|=1} \frac{\eta^{-1}\tau(\eta) - \tau'(\eta)}{\eta - \zeta}\,d\eta\right] = \\ = \frac{Mr(\varkappa + 1)}{2}\,\sigma\big(1 - \zeta^2 - \zeta^{-2}\big).\end{gathered} \tag{22}$$

$$d_0 = \frac{Mr(1 + \varkappa)}{4(r + M)}\sigma, \quad d_2 = \overline{d_{-2}} = -\frac{Mr(1 + \varkappa)}{2[2r + M(3 + \varkappa)]}\,\sigma, \quad d_k = 0, \quad k \neq 0, -2, 2. \tag{24}$$

$$\sigma_{\theta\theta} = -\frac{d_0}{r} - \frac{6d_2}{r}\,\sigma\cos 2\theta + (1 - 2\cos 2\theta)\sigma. \tag{26}$$

$$\sigma_{\theta\theta}\big|_{\theta=\pi/2} = 3\sigma - \frac{M(1 + \varkappa)[14r + M(15 + \varkappa)]}{4(r + M)[2r + M(3 + \varkappa)]}\,\sigma. \tag{27}$$

From (27) it follows that in case $M > 0$ for $r/M \sim 1$ or $r/M < 1$, where r is the radius of a hole, the surface stresses $\sigma^s_{\theta\theta}$ reduce concentration of the hoop stresses $\sigma_{\theta\theta}$. For a big value of the ratio r/M, this effect disappears.

The item [6] in the References of the corrected paper reads as follows:

6. R. V. Goldstein, V. A. Gorodtsov, and K. B. Ustinov, Effect of residual surface stress and surface elasticity on deformation of nanometer spherical inclusions in an elastic matrix. (Russian) *Phys. Mesomechanics.* **13** (2010), No. 5, 127–138.