

CONTACT PROBLEM OF A PLATE RESTING ON AN ELASTIC LAYER

Remark concerning the paper by V. A. Pal'mov
(PMM Vol. 24, No. 3, 1960, pp. 609-618)

(Zamechanie k rabote Pal'mova, V.A., "Kontaknaya zadacha o plastinke, lezhashchei na uprugom sloe")

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1. The formula for the quantity $K(x, t)$ entering the kernel of the integral equation (p. 616) is erroneous. The correct form is the following:

$$K(x, t) = \frac{1-\nu}{1+\nu} x^2 t^2 + H(x-t) + H(x+t) - 2[H(x) + H(t)]$$
$$H(x) = \frac{1}{2} x^2 \left(\ln|x| - \frac{1}{2} \right)$$

The author apparently has taken formula (4.3)

$$\int_0^{\infty} J_1(\lambda) \cos \lambda t d\lambda = \sqrt{1-t^2} \text{ instead of } \int_0^{\infty} J_1(\lambda) \cos \lambda t d\lambda = 1$$

2. Furthermore, in the expansion of the Macdonald function $K_0(\beta)$ for $\beta \sim 0$, the additive term $C = 0.5772$ (the Euler constant) has been taken erroneously with a plus sign instead of a minus sign.

Hence, expressions (4.7) and (4.8) should be

$$\frac{\partial I}{\partial x} = \lim_{\beta \rightarrow 0} \Pi = x(\ln 2 - 1) + \dots, \quad I = \frac{x^2}{2} (\ln 2 - 1) + \dots$$

Since the expression for the kernel of equation (3.8) is obtained erroneously, the table of values $\omega(x)$, calculated using formula (5.3), requires a recalculation.

Remark by V.A. Pal'mov

The remarks of O.D. Shilova are correct. The errors are explained by the fact that formulas were used without verification as they are

presented in the book by R.O. Kuz'min, *Bessel Functions* (1935, p. 47, formula 6, and p. 152, formula 39). These formulas are given there with errors. I would like to express to O.D. Shilova my gratitude for her comments.

Translated by G.H.