

LETTERS TO THE EDITOR

THE ROOTS OF THE CHARACTERISTIC EQUATIONS IN THE GORELIKA ARTICLE

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The characteristic equations (7) and (21) in [1] have the form

$$\operatorname{tg} \mu = - \frac{\mu (Bi_0 + Bi_1) \left(1 - \frac{r_0}{R}\right)}{Bi_0 Bi_1 \left(1 - \frac{r_0}{R}\right)^2 - \mu^2}, \quad (1)$$

$$\operatorname{tg} \mu = - \frac{\mu \left(Bi_0 + Bi_1 + \frac{R}{r_0} - 1\right) \left(1 - \frac{r_0}{R}\right)}{\left(\frac{R}{r_0} + Bi_0\right) (Bi_1 - 1) \left(1 - \frac{r_0}{R}\right) - \mu^2}. \quad (2)$$

Reference [1] provides a table for the values of the first root of these equations for $r_0/R = 0.2, 0.4, 0.6,$ and 0.8 under the condition that $Bi_0 = Bi_1$.

After substitution into (1) of

$$Bi_0^* = Bi_0 \left(1 - \frac{r_0}{R}\right) \text{ and } Bi_1^* = Bi_1 \left(1 - \frac{r_0}{R}\right) \quad (3)$$

we have

$$\operatorname{tg} \mu = \frac{\mu (Bi_0^* + Bi_1^*)}{\mu^2 - Bi_0^* - Bi_1^*}. \quad (4)$$

After substitution into (2) of

$$Bi_0^* = \left(Bi_0 + \frac{R}{r_0}\right) \left(1 - \frac{r_0}{R}\right) \text{ and } Bi_1^* = (Bi_1 - 1) \left(1 - \frac{r_0}{R}\right) \quad (5)$$

we again derive Eq. (4).

Reference [2] gives a table for the first three roots of (4).

More detailed tables of the first six roots of (4) for a wide range of variation in Bi_0^* and Bi_1^* are given in [3], pp. 64-115.

LITERATURE CITED

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