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RADIAL DISTRIBUTION OF ZEROS AND DEFICIENCY OF A CANONICAL PRODUCT OF FINITE GENUS

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1. Introduction. Edrei and Fuchs [1] proved the following

THEOREM A. *Let $f(z)$ be an entire function of finite order ρ, having only negative zeros. If $\rho>1$, then $\delta(0, f)>0$.*

This reveals a quite interesting fact that a simple geometrical restriction is enough to make zero a deficient value. Edrei, Fuchs and Hellerstein [2] made the above result better. They gave a numerical bound

$$\delta(0, f)\geqq\frac{A}{1+A}$$

with an absolute constant $A>0$. By a rough estimation their constant A satisfies $A<0.0017$. This is, of course, far from the best. There is still no reasonable conjecture for the best possible A.

They [2] gave the following result. (We state it here only in the case of genus one.)

THEOREM B. *Let $g(z)$ be a canonical product of genus one and having zeros $\{a_\mu\}$ in the sector*

$$|\pi-\arg a_\mu|\leqq\frac{\pi}{60}.$$

If the order of g is greater than one, then

$$\delta(0, g)\geqq\frac{A}{1+A},$$

where A is the constant already mentioned.

Again $\pi/60$ is far from the best together with A. In this paper we shall prove the following

THEOREM 1. *Let $g(z)$ be a canonical product of genus q, having only negative*

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