T. KOBAYASHI
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ON THE DEFICIENCY OF AN ENTIRE FUNCTION OF FINITE GENUS

BY TADASHI KOBAYASHI

1. Introduction. In [1], Edrei and Fuchs established the following

THEOREM A. *Let $f(z)$ be an entire function of finite order having only negative zeros. If the order is greater than one, then $f(z)$ has zero as a Nevanlinna deficient value.*

The extension of this result to more general distributions of the arguments of the zeros of an entire function was investigated in [2], [3] and [4].

Indeed Ozawa [4] gave the following result.

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

$$|\arg a_n - \pi| \leqq \frac{\pi}{4}.$$

Then

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

with a positive constant A.

In this paper we shall prove the following theorems.

THEOREM 1. *Let $g(z)$ be a canonical product of finite genus q $(\geqq 1)$ and having only zeros in the sector*

$$\left\{z : |\arg z - \pi| \leqq \frac{\pi}{2(q+1)}\right\}.$$

Then

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

with a positive constant $A(q)$.

THEOREM 2. *The assumptions of Theorem 1 imply*

$$q \leqq \mu \leqq \rho \leqq q+1$$

where ρ and μ indicate the order and the lower order of $g(z)$, respectively.

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