C. DAI AND L. JIN
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NUMBER OF DEFICIENT VALUES OF A CLASS of MEROMORPHIC FUNCTION

BY CHONGJI DAI AND LU JIN

Abstract

We proved the following Theorem

Theorem. *Let $f(z)$ be a meromorphic function of lower order $\mu<\infty$. If $\sum_a \delta(a, f')=2$ then we have*

$$P_0+P_1 \leqq \mu+1,$$

where P_0, P_1 are the numbers of finite deficient values of $f(z), f'(z)$ respectively.

1. Lemmas.

We need the following four known results.

LEMMA A [1 Theorem 1]. *Let $f(z)$ be a meromorphic function of lower order $\mu<\infty$. Assume that there exists a positive integer P which satifies*

$$P-\frac{1}{2} \leqq \mu<P+\frac{1}{2}.$$

Assume also that for some $A_0>0$ and $0<\varepsilon<1$,

$$K(f)=\varlimsup_{r\to\infty} \frac{N(r, f)+N(r, 1/f)}{T(r, f)}<\frac{\varepsilon}{A_0(P+1)},$$

then

1) $P \geqq 1$.

2) *For $r>r_0$ and all $1<\sigma \leqq 36$, we have*

$$\begin{cases} T(\sigma r, f)=\sigma^P T(r, f)(1+\eta(r, \sigma)) \\ |\eta(r, \sigma)|<\varepsilon . \end{cases} \tag{1.1}$$

3) *Let $E(\mu, P)$ denotes the Weierstrass primary factor of genus P and a_ν, b_μ ($\nu=1, 2, \cdots$; $\mu=1, 2, \cdots$) are zeros and poles of $f(z)$ respectively, then we have*

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