

ON THE ZERO-ONE-POLE SET OF A MEROMORPHIC FUNCTION, II

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0. Let $\{a_n\}$, $\{b_n\}$ and $\{p_n\}$ be three disjoint sequences with no finite limit points. If it is possible to construct a meromorphic function f in the plane C whose zeros, d -points and poles are exactly $\{a_n\}$, $\{b_n\}$ and $\{p_n\}$ respectively, where their multiplicities are taken into consideration, then the given triad $(\{a_n\}, \{b_n\}, \{p_n\})$ is called a *zero- d -pole set*. Here of course d is a nonzero complex number. Further if there exists only one meromorphic function f whose zero- d -pole set is just the given triad, then the triad is called *unique*. It is well known that unicity in this sense does not hold in general.

In Sections 1 and 2, the letter E will denote sets of finite linear measure which will not necessarily be the same at each occurrence.

1. Let f and g be meromorphic functions in the plane C . If f and g assume the value $a \in C \cup \{\infty\}$ at the same points with the same multiplicities, we denote this by $f = a \Leftrightarrow g = a$. With this notation, our first result of this note is stated as follows.

THEOREM 1. *Let f and g be nonconstant meromorphic functions satisfying $f = 0 \Leftrightarrow g = 0$, $f = 1 \Leftrightarrow g = 1$ and $f = \infty \Leftrightarrow g = \infty$. If*

$$(1.1) \quad \bar{K}(f) = \limsup_{r \rightarrow \infty} \{\bar{N}(r, 0, f) + \bar{N}(r, \infty, f)\} / T(r, f) < 1/2,$$

then $f \equiv g$ or $fg \equiv 1$.

From this we immediately deduce the following

COROLLARY 1. *Let f be a nonconstant meromorphic function satisfying $n(r, 0, f) + n(r, \infty, f) \neq 0$ and $\bar{K}(f) < 1/2$. Then the zero-one-pole set of f is unique.*

The estimate (1.1) is sharp. For example, let us consider $f = e^\alpha(1 - e^\alpha)$ and $g = e^{-\alpha}(1 - e^{-\alpha})$ with a nonconstant entire function α . Then we easily see that $f = 0 \Leftrightarrow g = 0$, $f = 1 \Leftrightarrow g = 1$ and $f = \infty \Leftrightarrow g = \infty$. Also, $f \neq g$ and $fg \neq 1$ are evident.

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