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ON THE CHARACTERISTIC OF AN ALGEBROID FUNCTION

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Let $f(z)$ be an n-valued transcendential algebroid function in $|z|<\infty$ defined by an irreducible equation

$$F(z,f)\equiv A_n(z)f^n+A_{n-1}(z)f^{n-1}+\cdots+A_0(z)=0,$$

where the coefficients $A_0,\cdots,A_n$ are entire functions without any common zeros. We set

$$A(z)=\max(|A_0|,\cdots,|A_n|).$$

Let $\mu(r,A)$ be defined by

$$\mu(r,A)=\frac{1}{2n\pi}\int_0^{2\pi}\log A(re^{i\theta})d\theta.$$

Recently Ozawa [1] obtained

LEMMA. *Suppose that there is at least one index j satisfying*

$$m\left(r,\frac{1}{A_j}\right)\leqq cm(r,A),\qquad c<1,$$

then

$$(1-c)m(r,A)\leqq n\mu(r,A)\leqq m(r,A).$$

In connection with this lemma he proposed the following problem.

Are there any algebroid functions satisfying

$$\varliminf_{r\to\infty}\frac{n\mu(r,A)}{m(r,A)}=0? \tag{1}$$

In this note using Ozawa's method we construct a two-valued algebroid function satisfying (1).

In the first place we consider

$$h(x)=\frac{(\log x)^\rho}{x},$$

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