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# A TAUBERIAN THEOREM FOR CERTAIN CLASS OF MEROMORPHIC FUNCTIONS

Dedicated to Professor M. Ozawa on the occation of his 60th birthday

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## § 1. Introduction.

Let $f(z)$ be meromorphic in the plane. We define $m_2(r, f)$ by

$$m_2(r, f)^2 = \frac{1}{2\pi}\int_0^{2\pi}(\log|f(re^{i\theta})|)^2 d\theta,$$

and denote by $N(r, c)$ the usual Nevanlinna counting function for the $c$-points of $f$ in $|z| \leqq r$, then Miles and Shea had shown

$$(1) \qquad K_2(f) \equiv \limsup_{r\to\infty}\frac{N(r, 0)+N(r, \infty)}{m_2(r, f)} \geqq \frac{|\sin\pi\rho|}{\pi\rho}\left\{\frac{2}{1+\sin 2\pi\rho/2\pi\rho}\right\}^{1/2} \equiv C(\rho)$$

for $\rho \in [\mu_*(T(r, f)), \lambda_*(T(r, f))]$.
Further they had characterized those $f$ for which equality holds in (1) as functions which are locally Lindelöffian (or the reciprocals of such).

Let $M_p$ be the class of all meromorphic functions $f(z)$ of order $\rho$ defined by $g(z)/g(-z)$ with the canonical product

$$g(z) = \prod_{n=1}^{\infty} E(z/a_n, q), \qquad q = [\rho].$$

Recently by making use of Fourier series method, Ozawa proved

THEOREM A. *Let $f(z)$ belongs to $M_p$, then*

$$(2) \qquad \limsup_{r\to\infty}\frac{N(r, 0)}{m_2(r, f)} \geqq \frac{\sqrt{2}}{\sqrt{\pi\rho}}\,\frac{|\cos\pi\rho/2|}{\{\pi\rho-\sin\pi\rho\}^{1/2}} \equiv B(\rho).$$

It is natural to hope that (2) holds for $\rho \in [\mu_*, \lambda_*]$ and that those $f$ for which equality holds in (2) are $f(z)=g(z)/g(-z)$ with locally Lindelöffian $g$. But when $\rho$ is an even integer, $B(\rho)>0$ and the proof is not straightforward. We need some existence lemma of strong peaks for $f \in M_\rho$.

We assume that the reader is familiar with the fundamental concept of Nevanlinna theory and Fourier series method developed by Miles and Shea (See

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