$$\sum{}' f^{(1)}(n_1)f^{(2)}(n_2) \cdots f^{(\nu)}(n_\nu) = (1 + o(1))Dn^{\nu-1},$$

also

$$\sum_{m=1}^{n} f^{(1)}(m + k_1)f^{(2)}(m + k_2) \cdots f^{(\nu)}(m + k_\nu) = (1 + o(1))En,$$

D and E are given by a complicated expression.

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ON A CLASS OF TAYLOR SERIES

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1. **Introduction.** Consider the Taylor series $\sum_{n=0}^{\infty} a_n z^n$. Suppose that the singularities of the function defined by the series all lie in certain regions of the complex plane and that the coefficients possess certain arithmetical properties. Mandelbrojt[1] has shown that under restrictions of this nature it is possible to predict the form of the function defined by the series. This note is concerned with the establishing of a new method to obtain more general results of this nature.

2. **The method.** The method that is employed here is an adaptation of a method used by Lindelöf [2] in the problem of representation of a function defined by a series.

Let $f(z)$ be regular in a region D of the complex plane. Suppose that there exists a linear transformation $t = h(z)$ which maps the region of regularity into a region which includes the unit circle of the t-plane in its interior. Let $z = g(t)$ be the inverse of this transformation. Then $F(t) \doteq f(g(t))$ is regular in this region in the t-plane. For this note it is convenient to suppose that $z = 0$ corresponds to $t = 0$ in the mapping. We may expand $g(t)$ in a Taylor series about $t = 0$ and obtain

$$z = b_1 t + b_2 t^2 + \cdots \tag{2.1}$$

convergent for t in absolute value sufficiently small. Let

$$f(z) = \sum_{n=0}^{\infty} a_n z^n \tag{2.2}$$

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[1] See, Mandelbrojt [3]. Numbers in brackets refer to the bibliography at the end of the paper.