

Zbl 078.26301

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On the number of zeros of successive derivatives of entire functions of finite order. (In English)

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Set $f(z)$ be an entire function, $M(r) = \max_{|z|=r} |f(z)|$, $x = H(y)$ the inverse function of $y = \log M(x)$, $N_k(f(z), 1)$ the number of zeros of $f^{(k)}(z)$ in the unit circle. Then

$$\overline{\lim}_{k \rightarrow \infty} k^{-1} N_k(f(z), 1) H(k) \leq e^{2-e^{-1}}$$

when $f(z)$ is of finite order $\rho \geq 1$. Compare the author's paper (see Zbl 070.29601), where e^2 appears on the R. H. S. of the inequality and ρ is unrestricted.

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Classification:

30D20 General theory of entire functions

30C15 Zeros of polynomials, etc. (one complex variable)