

ON THE GROWTH PROPERTIES OF COMPOSITE
ENTIRE FUNCTIONS

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Abstract: The main aim of this paper is to study some growth properties of entire functions on the basis of generalized relative order (α, β) where α and β are continuous non-negative functions on $(-\infty, +\infty)$.

Keywords and Phrases: Entire function, growth, composition, generalized relative order (α, β) , generalized relative lower order (α, β) .

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1. Introduction, Definitions and Notations

We denote by \mathbb{C} the set of all finite complex numbers. Let f be an entire function defined on \mathbb{C} . The maximum modulus function $M_f(r)$ and the maximum term $\mu_f(r)$ of $f = \sum_{n=0}^{\infty} a_n z^n$ on $|z| = r$ are defined as $M_f = \max_{|z|=r} |f(z)|$ and $\mu_f(r) = \max_{n \geq 0} (|a_n| r^n)$ respectively. Moreover, if f is non-constant entire function then $M_f(r)$ is also strictly increasing and continuous function of r . Therefore, its inverse $M_f^{-1} : (M_f(0), \infty) \rightarrow (0, \infty)$ exists and is such that $\lim_{s \rightarrow +\infty} M_f^{-1}(s) = \infty$. We