

## On some problems regarding growth analysis of composite entire and meromorphic function

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**Abstract.** In the paper we establish some new results depending on the comparative growth properties of composite entire or meromorphic functions using relative  $L^*$ -order, relative  $L^*$ -type and relative  $L^*$ -weak type.

### 1. Introduction, Definitions and Notations.

Let  $f$  be an entire function defined in the open complex plane  $\mathbb{C}$ . The maximum modulus function  $M_f(r)$  corresponding to  $f$  is defined on  $|z| = r$  as follows:

$$M_f(r) = \max_{|z|=r} |f(z)|.$$

When  $f$  is meromorphic,  $M_f(r)$  cannot be defined as  $f$  is not analytic throughout the complex plane. In this situation, one may introduce another function  $T_f(r)$  known as Nevanlinna's characteristic function of  $f$ , playing the same role as maximum modulus function in the following manner:

$$T_f(r) = N_f(r) + m_f(r),$$

where

$$N_f(r) = \int_0^r \frac{n_f(t) - n_f(0)}{t} dt + n_f(0) \log r$$

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