

STUDY ON GROWTH OF k-ITERATED ENTIRE FUNCTIONS

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(Received: Sep. 08, 2019 Accepted: Feb. 21, 2020 Published: Apr. 30, 2020)

Abstract: Considering k entire functions, we study growth of k -iterated entire functions to generalise some earlier results.

Keywords and Phrases: Growth, iteration, entire function.

2010 Mathematics Subject Classification: 30D35.

1. Introduction

Let $f(z)$ and $g(z)$ be two transcendental entire functions defined in \mathbb{C} . We know [2] that $\lim_{r \rightarrow \infty} \frac{T(r, f \circ g)}{T(r, f)} = \infty$ and $\lim_{r \rightarrow \infty} \frac{T(r, f \circ g)}{T(r, g)} = \infty$. Lahiri and Datta [7] investigated comparative growth properties of $\log T(r, f \circ g)$ and $T(r, g)$ together with that of $\log \log T(r, f \circ g)$ and $T(r, f^{(l)})$. After this, Banerjee and Dutta [1] considering two functions $f(z)$ and $g(z)$ and following Lahiri and Banerjee [4] formed relative iterations and studied the growth properties of iterated entire functions.

In this paper we consider k entire functions $f_1(z), f_2(z), f_3(z), \dots, f_k(z)$ and form the iteration [defined below] to generalise the results of Banerjee and Dutta [1].