South East Asian J. of Mathematics and Mathematical Sciences
Vol. 16, No. 1 (A) (2020), pp. 55-60

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

ESTIMATES OF INITIAL COEFFICIENTS FOR FUNCTIONS IN NEW SUBCLASSES OF BI-UNIVALENT FUNCTIONS DEFINED USING GENERALIZED DIFFERENTIAL OPERATOR

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(**Received:** *Mar. 03, 2020* **Accepted:** *April. 26, 2020* **Published:** *Apr. 30, 2020)*

Abstract: We defined a new subclass of the function class $\sum$ in the unit disk associated with a generalized differential operator. We estimated some coefficient bounds for the functions in the defined new subclass. As special cases, well-known results were obtained by varying parameters in the main results.

Keywords and Phrases: Coefficient bounds, bi-univalent, subclasses, differential operator.

2010 Mathematics Subject Classification: Primary 30C45, secondary 30C50.

1. Introduction and Preliminaries

We denote by A the class of regular functions defined in the open unit disk $\Delta = \{z : |z| < 1\}$ with the normalization conditions $f(0) = f'(0) - 1 = 0$ and the Taylor series expansion,

$$f(z) = z + \sum_{k=2}^{\infty} a_k z^k \tag{1}$$

We know that "The range of every function of the class S contains a disk $\{w : |w| < 1/4\}$", by the Koebe-one quater theorem [3] (Theorem 2.3 pg. 31). Hence there exists inverse f^{-1} for every function $f \in S$, defined by $f^{-1}(f(z)) = z, (z \in \Delta)$ and

$$f(f^{-1}(w)) = w, (|w| < r_0(f) : r_0(f) \geq 1/4).$$