

## Coefficient bounds for a subclass of Bi-univalent functions using differential operators\*

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### Abstract

In the present paper, we introduce new subclass  $ST_{\Sigma}(b, \phi)$  of bi-univalent functions defined in the open disk. Furthermore, we find upper bounds for the second and third coefficients for functions in these new subclass using differential operator.

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**Keywords:** bi-univalent functions, coefficient estimates, starlike function, convex function, differential operator.

## 1 Introduction. Definitions And Preliminaries

Let  $\mathcal{A}$  denote the class of functions  $f(z)$  of the form

$$f(z) = z + \sum_{n=2}^{\infty} a_n z^n, \quad (1.1)$$

which are analytic in the open unit disk  $\mathbb{U} = \{z \in \mathcal{C} : |z| < 1\}$ . Further, by  $\mathcal{S}$  we shall denote the class of functions  $f \in \mathcal{A}$  which are univalent in  $\mathbb{U}$ .

Since univalent functions are one-to-one, they are invertible and the inverse functions need not be defined on the entire unit disk  $\mathbb{U}$ . However, the

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