

A class of univalent functions II

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Abstract. In this paper we consider certain properties of the class of functions $f(z) = z + a_2z^2 + \cdots$ which are analytic in the unit disc and satisfy the condition

$$\left| f'(z) \left(\frac{z}{f(z)} \right)^{1+\mu} - 1 \right| < \lambda, \quad 0 < \mu < 1, \quad 0 < \lambda \leq 1 \quad [3].$$

Key words: univalent, starlike.

1. Introduction and preliminaries

Let H denote the class of functions analytic in the unit disc $U = \{z : |z| < 1\}$ and let $A \subset H$ be the class of normalized analytic functions f in U such that $f(0) = f'(0) - 1 = 0$. Let

$$S^*(\beta) = \left\{ f \in A : \operatorname{Re} \left\{ \frac{zf'(z)}{f(z)} \right\} > \beta, \quad 0 \leq \beta < 1, \quad z \in U \right\}$$

denote the class of *starlike functions of order* β . We put $S^* \equiv S^*(0)$ (the class of *starlike functions*). It is well-known that these classes belong to the class of univalent functions in U (see, for example [2]). Also, it is known that the class

$$B_1(\mu) = \left\{ f \in A : \operatorname{Re} \left\{ f'(z) \left(\frac{f(z)}{z} \right)^{\mu-1} \right\} > 0, \quad \mu > 0, \quad z \in U \right\} \quad (1)$$

is the class of univalent functions in U ([1]).

In the paper [3] the author considered the class of functions $f \in A$ defined by the condition

$$\left| f'(z) \left(\frac{z}{f(z)} \right)^{1+\mu} - 1 \right| < \lambda, \quad (2)$$

where $0 < \mu < 1$, $0 < \lambda \leq 1$, $z \in U$, i.e. for $-1 < \mu < 0$ in (1). In the same