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ESTIMATES ON THE FIFTH COEFFICIENTS OF STRONGLY STARLIKE FUNCTIONS

Abstract. Let A be the class of analytic functions in the open unit disk D which have the form $f(z) = z + \sum_2^\infty a_n z^n$. For given $\alpha \in (0,1]$, let us define the class S_α^* of strongly starlike functions of order α which satisfy

$$\left| Arg\left\{\frac{zf'(z)}{f(z)}\right\} \right| < \frac{\pi}{2}\alpha, \ z \in D.$$

In this talk, we introduce a new method to find the sharp bound for the fifth coefficient a_5 of the functions in S_α^* by using the properties of Caratheodory functions. And similar coefficient problems for gamma starlike functions of order β ($\beta \geq 0$) and Bazilevic functions of order γ ($\gamma \geq 0$) are examined by this approach.

Key words. Univalent functions, Strongly starlike functions, Gamma starlike functions, Bazilevic functions, Fifth coefficients

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