Growth Theorem and the Radius of Starlikeness of Close-to-Spirallike Functions

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Abstract

Let $A$ be the class of all analytic functions in the open unit disc $\mathbb{D} = \{ z \mid |z| < 1 \}$ of the form $f(z) = z + a_{2}z^{2} + a_{3}z^{3} + \cdots$. Let $g(z)$ be an element of $A$ satisfying the condition $\text{Re} \left( (e^{i\alpha}g'(z)) \right) > 0$ for some $\alpha$, where $|\alpha| < \frac{\pi}{2}$. Then $g(z)$ is said to be $\alpha$-spirallike. Such functions are known to be univalent in $\mathbb{D}$. Let $S^{*}(\alpha)$ denote the class of all functions $g(z)$ satisfying the above condition for a given $\alpha$. A function $f(z) \in A$ is called close-to-$\alpha$ spirallike if there exists a function $g(z)$ in $S^{*}(\alpha)$ such that $\text{Re} \left( \left( \frac{f(z)}{g(z)} \right) \right) > 0$. The class of such functions is denoted by $S^{*}K(\alpha)$.

The aim of this talk is to give a growth theorem and the radius of starlikeness of the class $S^{*}K(\alpha)$.

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