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 Re $\left((e^{i\alpha} \frac{g'(z)}{g(z)}\right) > 0$ for some α, where $|\alpha| < \frac{\pi}{2}$. Then $g(z)$ is said to be α-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 α. A function $f(z) \in A$ is called close-to-α spirallike if there exists a function $g(z)$ in $S^*(\alpha)$ such that Re $\left((\frac{f(z)}{g(z)}\right) > 0$. 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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