

Coefficient Inequality for Starlike Functions

Seher Melike Aydogan
State University of New York, College at Brockport
saydogan@brockport.edu

Abstract

Let \mathcal{A} be the class of analytic functions f which are regular and satisfying the conditions $f(0) = 0, f'(0) = 1$. In other words each f in \mathcal{A} has the power series representation $f(z) = z + a_2z^2 + a_3z^3 + \dots$ in the open unit disc $\mathbb{D} = \{z \mid |z| < 1\}$. For $q \in (0, 1)$, let q -difference operator be defined as follows

$$D_q f(z) = \frac{f(z) - f(qz)}{z(1-q)} \quad (z \in \mathbb{D})$$

Let, $f(z)$ be an element of \mathcal{A} if

$$\left| z \frac{D_q(f(z))}{f(z)} - \frac{1}{1-q} \right| < \frac{1}{1-q}, q \in (0, 1)$$

then $f(z)$ is called q -starlike function. The class of such functions is denoted by S_q^* . Clearly, when $q \rightarrow 1$ the class S_q^* will coincide with S^* . In the present paper we will solution the Bieberbach-Brange theorem for S_q^* .

References

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