ON A SUBCLASS OF ANALYTIC FUNCTIONS WITH NEGATIVE COEFFICIENTS ASSOCIATED TO AN INTEGRAL OPERATOR INVOLVING HURWITZ-LERCH ZETA FUNCTION

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Abstract. Making use of an integral operator involving the Hurwitz-Lerch zeta function, we introduce a new subclass of analytic functions $Q_{s,b}^{*\alpha}(\delta, \beta)$ defined in the open unit disk and investigate its various characteristics. Further we obtain distortion bounds, extreme points and radii of close-to-convexity, starlikeness and convexity for functions belonging to the class $Q_{s,b}^{*\alpha}(\delta, \beta)$.

1. INTRODUCTION AND PRELIMINARIES

Let A denote the class of all analytic functions in the open unit disk

$$\mathbb{U} = \{z \in \mathbb{C} : |z| < 1\},$$

of the form

$$(1) \qquad f(z) = z + \sum_{n=2}^{\infty} a_n z^n, \quad (z \in \mathbb{U}).$$

For functions $f \in A$ given by (1) and $g \in A$ given by $g(z) = z + \sum_{n=2}^{\infty} b_n z^n$, we define the Hadamard product (or convolution) of f and g by

$$(f * g)(z) = z + \sum_{n=2}^{\infty} a_n b_n z^n.$$

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