

**ON SUBCLASSES OF ANALYTIC FUNCTIONS INVOLVING
 q -DERIVATIVE OPERATOR WITH NEGATIVE COEFFICIENTS**

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Abstract: The purpose of this work is to introduce and study new subclasses of analytic functions using a new q -derivative operator. This operator generalizes the operators introduced by Al-Oboudi, Catas, Cho and Kim, Cho and Srivastava, Maslina Darus and R W Ibrahim, Sălăgean, Uralegaddi and Somanatha. We investigate coefficient bounds, growth, distortion and closure theorems for the functions belonging to these classes. We also give a result which unifies radii of close-to-convexity, starlikeness and convexity.

Keywords and Phrases: q -derivative operator, coefficient bounds, growth, distortion and closure theorems.

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1. Introduction

We begin by denoting by \mathcal{S} the class of functions $f(z)$ of the form

$$f(z) = z + \sum_{k=2}^{\infty} a_k z^k \quad (1.1)$$