

## ON CERTAIN CLASSES OF ANALYTIC FUNCTIONS OF COMPLEX ORDER DEFINED BY DZIOK–SRIVASTAVA OPERATOR

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*Abstract.* Making use of the generalized hypergeometric functions, we introduced certain new subclasses of analytic functions defined by Dziok-Srivastava operator in the unit disc. The main object of the present paper is to investigate the various properties and characteristics of analytic functions belonging to the subclasses  $S_n(l, m, \lambda, b, \gamma)$  satisfying the inequality

$$\left| \frac{1}{b} \left( \frac{z \left( H_m^l[\alpha_1, \beta_1]f(z) \right)'}{\left( (1-\lambda)H_m^l[\alpha_1, \beta_1]f(z) + \lambda z \left( H_m^l[\alpha_1, \beta_1]f(z) \right)' \right)^r} - 1 \right) \right| < \gamma,$$

where  $z \in U$ ,  $b \in \mathbb{C} \setminus \{0\}$ ,  $0 < \gamma \leq 1$ ,  $0 \leq \lambda \leq 1$  and  $H_m^l[\alpha_1, \beta_1]f(z)$  is Dziok-Srivastava operator. Also let  $R_n(l, m, \lambda, b, \gamma)$  be an another subclass satisfying the inequality

$$\left| \frac{1}{b} \left( (1-\lambda) \frac{H_m^l[\alpha_1, \beta_1]f(z)}{z} + \lambda \left( H_m^l[\alpha_1, \beta_1]f(z) \right)' - 1 \right) \right| < \gamma$$

where  $z \in U$ ,  $b \in \mathbb{C} \setminus \{0\}$ ,  $0 < \gamma \leq 1$ ,  $0 \leq \lambda \leq 1$  and  $H_m^l[\alpha_1, \beta_1]f(z)$  is given by Dziok-Srivastava [7]. Apart from deriving a set of coefficient bounds for each of these function classes, we establish several inclusion relationships involving the  $(n, \delta)$ -neighborhoods of analytic functions with negative coefficients belonging to these subclasses.

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