

**Singh, Sukhjit; Gupta, Sushma**

**Some applications of a first order differential subordination.** (English) Zbl 1083.30016  
JIPAM, J. Inequal. Pure Appl. Math. 5, No. 3, Paper No. 78, 15 p. (2004).

Let  $p$  and  $q$  be analytic functions in the unit disc  $E = z : |z| < 1$ , with  $p(0) = q(0) = 1$ . Assume that  $\alpha$  and  $\delta$  are real numbers such that  $0 < \delta \leq 1$ ,  $\alpha + \delta \geq 0$ . Let  $\beta$  and  $\gamma$  be complex numbers with  $\beta \neq 0$ . The authors investigate the differential subordination

$$p^\alpha(z) \left( p(z) + \frac{zp'(z)}{\beta p(z) + \gamma} \right)^\delta \prec q^\alpha(z) \left( q(z) + \frac{zq'(z)}{\beta q(z) + \gamma} \right)^\delta$$

for  $z \in E$ , and obtained several sufficient conditions for starlikeness and univalence of functions analytic in the unit disc  $E$ .

Reviewer: Maslina Darus (Selangor)

**MSC:**

- 30C45** Special classes of univalent and multivalent functions of one complex variable (starlike, convex, bounded rotation, etc.) Cited in 1 Document
- 30C50** Coefficient problems for univalent and multivalent functions of one complex variable

**Keywords:**

univalent function; starlike function; convex function; differential subordination

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