

Altintas, Osman

On a subclass of certain starlike functions with negative coefficients. (English) Zbl 0739.30011
Math. Jap. 36, No. 3, 489-495 (1991).

The author defines a new class of analytic functions with negative coefficients, $P(n, \lambda, \alpha)$, a generalization of classes defined by *H. Silverman* [Proc. Am. Math. Soc. 51, 109-116 (1975; Zbl 0311.30007)] and *H. M. Srivastava, S. Owa* and *S. K. Chatterjea* [Rend. Semin. Mat. Univ. Padova 77, 115-124 (1987; Zbl 0596.30018)].

$$f(z) = z - \sum_{k=n+1}^{\infty} a_k t^k, \quad a_k > 0, \quad n \in \mathbb{N},$$

analytic in the unit disk U is said to be in $P(n, \lambda, \alpha)$ if it satisfies

$$\operatorname{Re}\{[zf'(z) + \lambda z^2 f''(z)]/[\lambda z f'(z) + (1 - \lambda)f(z)]\} > \alpha$$

for some α , $0 \leq \alpha < 1$, λ , $0 \leq \lambda \leq 1$ and for $z \in U$. Distortion inequalities, the order of starlikeness and results for fractional integral and derivatives are given.

Reviewer: O.Fekete (Freiburg)

MSC:

- 30C45** Special classes of univalent and multivalent functions of one complex variable (starlike, convex, bounded rotation, etc.)
26A33 Fractional derivatives and integrals

Cited in **1** Review
Cited in **13** Documents

Keywords:

fractional calculus; functions with negative coefficients; order of starlikeness