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ON A CLASS OF ANALYTIC FUNCTIONS WITH POSITIVE COEFFICIENTS DEFINED BY CONVOLUTION

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Abstract. Let $g(z) = z + \sum_{n=2}^{\infty} b_n z^n$, $b_n > 0$ be a fixed analytic function defined on $\Delta = \{z; |z| < 1\}$. In the present investigation, we introduce the class of functions $f = z + \sum_{n=2}^{\infty} a_n z^n$, $a_n \geq 0$ satisfying

$$\Re\left(\frac{z(f*g)'(z)}{(f*g)(z)}\right) < \alpha \quad (z \in \Delta; 1 < \alpha < 3/2)$$

and obtain the coefficient inequality, coefficient estimate, distortion theorem, and a closure theorem. Also we consider a radius problem. Our result contains several new results as special cases.

MSC 2000. 34C45.

Key words. Starlike function, Ruscheweyh derivative, Salagean derivative, convolution, positive coefficients, coefficient inequality, distortion theorem, radius problem.

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