Bounds for the second Hankel determinant of certain univalent functions

ABSTRACT

The estimates for the second Hankel determinant $a_2 a_4 - a_3^2$ of the analytic function $f(z) = z + a_2 z^2 + a_3 z^3 + \cdots$, for which either $zf'(z)/f(z)$ or $1 + zf''(z)/f'(z)$ is subordinate to a certain analytic function, are investigated. The estimates for the Hankel determinant for two other classes are also obtained. In particular, the estimates for the Hankel determinant of strongly starlike, parabolic starlike and lemniscate starlike functions are obtained.