INITIAL COEFFICIENT BOUND FOR $m$–FOLD
SYMmetric BI–$\lambda$–CONvEX FUNCTIONS

S. SIVASUBRAMANIAN AND R. SIVAKUMAR

Abstract. Let the functions $f(z) = z + a_2z^2 + \cdots$ and its inverse $f^{-1}$ be analytic and univalent in the unit disk. Such class of functions are called bi-univalent and denoted by $\sigma$ [9]. In an article, Pommerenke [10] remarked that, for an $m$-fold symmetric functions in the class $\mathcal{P}$, the well known lemma stated by Caratheody for a one fold symmetric functions in $\mathcal{P}$ still holds good. Making use of this remark, we introduce two new subclasses of bi-univalent functions in which both $f$ and $f^{-1} = g$ are $m$-fold symmetric analytic functions with $(1 - \lambda)\frac{zf''(z)}{f'(z)} + \lambda \left(1 + \frac{zg''(w)}{g'(w)}\right)$ and $(1 - \lambda)\frac{wg''(w)}{g'(w)} + \lambda \left(1 + \frac{wzg''(w)}{g'(w)}\right)$ in $\mathcal{P}$ and obtain coefficient bounds for functions in this new classes.


Keywords and phrases: Analytic functions, univalent functions, bi-univalent functions, $m$-fold symmetric functions, $m$-fold symmetric bi-univalent functions, $\lambda$-convex functions, bi-$\lambda$-convex functions.

REFERENCES


