

SUBCLASSES OF STARLIKE FUNCTIONS
INVOLVING A CERTAIN INTEGRAL OPERATOR

GANGADHARAN MURUGUSUNDARAMOORTHY

Abstract. Making use of the generalized integral operator, we define a new subclass of uniformly convex functions and a corresponding subclass of starlike functions with negative coefficients and obtain coefficient estimates, extreme points, the radii of close to convexity, starlikeness and convexity. In particular, we obtain integral means inequalities for the function $f(z)$ belongs to the class $\mathcal{UC}\mathcal{T}(\alpha, \beta, \gamma, \lambda, m)$ in the unit disc.

MSC 2010. 30C45.

Key words. Univalent, starlike, convex, uniformly convex, uniformly starlike, Hadamard product, integral means.

REFERENCES

- [1] ALEXANDER, J.W., *Functions which map the interior of the unit circle upon simple regions*, Ann. of Math., **17** (1915), 12–22.
- [2] AQLAN, E., JAHANGIRI, J.M. and KULKARNI, S.R., *Classes of k -uniformly convex and starlike functions*, Tamkang J. Math., **35** (2004), 1–7.
- [3] BERNARDI, S.D., *Convex and starlike univalent functions*, Trans. Amer. Math. Soc., **135** (1969), 429–446.
- [4] CATAŞ, A. *On certain classes of p -valent functions defined by multiplier transformations*. In Proceedings of the International Symposium on Geometric Function Theory and Applications (Istanbul, Turkey, August 20–24, 2007; S. Owa and Y. Polatoğlu, Eds.), TC İstanbul Kültür University Publications, **91**, Istanbul, 2008, pp. 241–250.
- [5] FLETT, T.M., *The dual of an inequality of Hardy and Littlewood and some related inequalities*, J. Math. Anal. Appl., **38** (1972), 746–765.
- [6] GOODMAN, A.W., *On uniformly convex functions*, Ann. Polon. Math., **56** (1991), 87–92.
- [7] GOODMAN, A.W., *On uniformly starlike functions*, J. Math. Anal. Appl., **155** (1991), 364–370.
- [8] JUNG, T.B., KIM, Y.C. and SRIVASTAVA, H.M., *The Hardy space of analytic functions associated with certain one-parameter families of integral operators*, J. Math. Anal. Appl., **176** (1993), 138–147.
- [9] LITTLEWOOD, J.E., *On inequalities in theory of functions*, Proc. London Math. Soc., **23** (1925), 481–519.
- [10] MURUGUSUNDARAMOORTHY, G. and VIJAYA, K., *On certain subclass of starlike functions with fixed two points*, J. Indian Math. Soc., **71** (2004), 131–139.
- [11] RØNNING, F., *Uniformly convex functions and a corresponding class of starlike functions*, Proc. Amer. Math. Soc., **118** (1993), 189–196.
- [12] SILVERMAN, H., *Integral means for univalent functions with negative coefficients*, Houston J. Math., **23** (1997), 169–174.
- [13] SILVERMAN, H., *Univalent functions with negative coefficients*, Proc. Amer. Math. Soc., **51** (1975), 109–116.

- [14] SUBRAMANIAN, K.G., MURUGUSUNDARAMOORTHY, G., BALASUBRAHMANYAM, P. and SILVERMAN, H., *Subclasses of uniformly convex and uniformly starlike functions*, Math. Japonica, **42** (1995), 517–522.

Received March 4, 2010

Accepted January 22, 2011

VIT University
School of Advanced Sciences
Vellore – 632014, India
E-mail: gmsmoorthy@yahoo.com