J. Adv. Math. Stud.
Vol. **8**(2015), No. 1, 104-114
http://journal.fairpartners.ro

SOME CLASSES OF k-UNIFORMLY CLOSE-TO-CONVEX FUNCTIONS

KHALIDA INAYAT NOOR AND RABIA FAYYAZ

Abstract. In this paper, we define some new classes of analytic functions related to conic domains using the Ruscheweyh derivative. Several interesting and significant results including growth rate of coefficients, coefficient difference and integral preserving properties for these new classes, are derived. We also obtained the rate of growth of Hankel determinant for these classes. Some special cases are also discussed.

REFERENCES

[1] M. Acu: *On a subclass of n-uniformly close to convex functions*, Gen. Math., **14**(2006), 55-64.
[2] D.A. Brannan, J.G. Cluine and W.E. Kirwan: *On the coefficient problem for the functions of bounded boundary rotation*, Ann. Acad. Sci. Fenn. Math., **523**(1973), 1-18.
[3] A.W. Goodman: *Univalent Functions*, Polygonal Publishing House, Washington, New Jersey, 1983.
[4] G.M. Golusin: *On distortion theorem and coefficients of univalent functions*, Mat. Sb., **19**(1946), 183-203.
[5] W.K. Hayman: *On functions with positive real part*, J. Lond. Math. Soc., **36**(1961), 34-48.
[6] S. Kanas: *Techniques of the differential subordination for domains bounded by conic sections*, Int. J. Math. Math. Sci., **38**(2003), 2389-2400.
[7] S. Kanas and A. Winiowska: *Conic regions and k-uniform convexity*, J. Comput. Appl. Math., **105**(1999), 327-336.
[8] W. Kaplan: *Close-to-convex schlicht functions*, Michigan Math. J., **1**(1952), 169-185.
[9] K.I. Noor: *On Hankel determinants for close-to-convex functions*, Int. J. Math. Math. Sci., **3**(1980), 477-481.
[10] K.I. Noor: *On a generalization of close-to-convexity*, Int. J. Math. Math. Sci., **6**(1983), 327-334.
[11] K.I. Noor, M. Arif and W. Ul-Haq: *On k-uniformly close-to-convex functions of complex order*, Appl. Math. Comput., **215**(2009), 629-635.
[12] B. Pinchuck: *Functions of bounded boundary rotation*, Israel J. Math., **10**(1971), 7-16.
[13] Ch. Pommerenke: *On starlike and close-to-convex functions*, Proc. Lond. Math. Soc., **13**(1963), 290-304.
[14] Ch. Pommerenke: *On close-to-convex analytic functions*, Trans. Amer. Math. Soc., **114**(1965), 176-186.
[15] Ch. Pommerenke: *On the coefficients and Hankel determinants of univalent functions*, J. Lond. Math. Soc., **41**(1965), 111-122.
[16] S. Ruscheweyh: *A new criteria for univalent functions*, Proc. Amer. Math. Soc., **49**(1975), 109-115.

Received: 19 December, 2014. *Revised*: 15 January, 2015.
2010 *Mathematics Subject Classification*: 30C45, 30C50, 30C55.
Key words and phrases: Conic domains, close-to-convex functions, subordination, convolution, Hankel determinant.

©2015 Fair Partners Team for the Promotion of Science & Fair Partners Publishers

[17] S. Ruscheweyh: *Convolution in Geometric Function Theory*, Les Presse De universite de Montreal, Montreal, 1982.

COMSATS Institute of Information Technology
Department of Mathematics
Islamabad, Pakistan
E-mail address: khalidanoor@hotmail.com

COMSATS Institute of Information Technology
Department of Mathematics
Islamabad, Pakistan
E-mail address: rabia_fayyaz@comsats.edu.pk