

**SUBCLASSES OF STARLIKE AND CONVEX FUNCTIONS  
ASSOCIATED WITH BESSSEL FUNCTIONS**

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**ABSTRACT.** The purpose of the present paper is to determine necessary and sufficient conditions for the generalized Bessel functions of first kind to belong to two new subclasses of analytic functions.

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REFERENCES

- [1] R. M. Ali, K. G. Subramanian, V. Ravichandran, and Om P. Ahuja, *Neighborhoods of starlike and convex functions associated with parabola*, J. Inequal. Appl. 2008, Article ID 346279, 9 pages
- [2] A. Baricz, *Geometric properties of generalized Bessel functions*, Publ. Math. Debrecen, 73(1-2) (2008), 155-178.
- [3] A. Baricz, *Geometric properties of generalized Bessel functions of complex order*, Mathematica, 48(71)(1) (2006), 13–18.
- [4] A. Baricz, *Generalized Bessel functions of the first kind*, PhD thesis, Babes-Bolyai University, Cluj-Napoca, (2008).
- [5] R.Bharati,R.Parvatham and A.Swaminathan, *On subclasses of uniformly convex functions and corresponding class of starlike functions*, Tamkang J.Math., 26(1)(1997), 17–32.
- [6] T. R. Caplinger and W. M. Causey, *A class of univalent functions*, Proc. Amer. Math. Soc., 39(1973) 357–361.
- [7] N.E. Cho, S.Y.Woo and S. Owa, *Uniform convexity properties for hypergeometric functions*, Fract. Cal. Appl. Anal., 5(3) (2002),303-313.
- [8] K. K. Dixit and S. K. Pal, *On a class of univalent functions related to complex order*, Indian J. Pure Appl. Math. 26(9)(1995) 889-896.
- [9] E. Merkes and B.T. Scott, *Starlike hypergeometric functions*, Proc. Amer. Math. Soc., 12 (1961), 885-888.
- [10] S.R. Mondal and A. Swaminathan, *Geometric properties of Generalized Bessel functions*, Bull. Malays. Math. Sci. Soc., 35(1) (2012), 179–194.
- [11] A.O. Mostafa, *A study on starlike and convex properties for hypergeometric functions*, J. Inequal. Pure Appl. Math., 10(3) (2009), Art., 87, 1-16.
- [12] G. Murugusundaramoorthy , K. Vijaya and K. Uma, *Subordination Results for a Class of Analytic Functions Involving the Hurwitz-Lerch Zeta Function*, Int. J. Nonlinear Sci. 10 (2010), No.4, pp.430–437
- [13] K. S. Padmanabhan, *On a certain class of functions whose derivatives have a positive real part in the unit disc*, Ann. Polon. Math. 23(1970) 73–81.
- [14] H. Silverman, *Starlike and convexity properties for hypergeometric functions*, J. Math. Anal. Appl., 172 (1993), 574-581.

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- [15] K.G.Subramanian, G.Murugusundaramoorthy, P.Balasubrahmanyam and H.Silverman, *Subclasses of uniformly convex and uniformly starlike functions*, Math.Japonica, 42(3), (1995), 517–522.
- [16] K.G.Subramanian, T.V.Sudharsan, P.Balasubrahmanyam and H.Silverman, *Classes of uniformly starlike functions*, Publ.Math.Debrecen, 53(3–4),(1998), 309–315.
- [17] H. M. Srivastava, G. Murugusundaramoorthy, and S. Sivasubramanian, *Hypergeometric functions in the parabolic starlike and uniformly convex domains*, Integral Transform Spec. Funct. 18 (2007), 511–520.

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