

**FEKETE-SZEGÖ INEQUALITY FOR CERTAIN SUBCLASSES  
OF ANALYTIC FUNCTIONS WITH RESPECT TO  
( $j, k$ )-SYMMETRIC POINTS**

P. NANDINI<sup>1</sup>, L. DILEEP<sup>2</sup> AND S. LATHA<sup>3</sup>

ABSTRACT. In the present work, by using the concept of  $q$ -Ruscheweyh derivative, we define new subclasses of analytic functions of complex order with respect to  $(j, k)$ -symmetric points and we discuss the coefficient estimates for these defined classes.

REFERENCES

- [1] Q. Hu, H. M. Srivastava, B. Ahmad, N. Khan, M. G. Khan, W. K. Mashwani and B. Khan, *A subclass of multivalent Janowski type  $q$ -Starlike functions and its consequences*, Symmetry **13**, (2021), 1275.
- [2] F. H. Jackson, *On  $q$ -definite integrals*, Quarterly J. Pure Appl. Math., **41**, (1910), 193-203.
- [3] S.Kanas and A. Leeko, *On the Fekete-Szego problem and the domain convexity for a certain class of univalent functions*, Folia Sci.Univ.Tech.Resow. **73**, (1990), 49-58.
- [4] N. Khan, M. Shafiq, M. Darus, B. Khan and Q. Z. Ahmad, *Upper bound of the third Hankel determinant for a subclass of  $q$ -starlike functions associated with Lemniscate of Bernoulli*, J. Math. Inequal. **14** (1), (2020), 51–63.
- [5] P. Liczberski and J. Polubinski, *On  $(j, k)$ -symmetrical functions*, Math. Bohem., **120**, (1995), 13-25
- [6] W. C. Ma and D.Minda, *A unified treatment of some special classes of univalent functions*, in Proceedings of the conference on complex Analysis(Tianjin, 1992), Conf.Proc. Lecture Notes Anal., Int. Press, Cambridge, MA, 157-169.
- [7] P. Nandini and S. Latha, *A note on  $q$ -Ruscheweyh type functions*, IJMTT, **34** , (2016), 1-4.
- [8] P.Nandini and S. Latha, *Coefficient estimates of certain classes of analytic functions of complex order by using  $q$ -Ruscheweyh derivative*, Ann. Univ. Oradea, fasc. Math.**7(2)**, (2020), 131-135.
- [9] M. A. Nasar and M. K. Aouf, *On convex functions of complex order*, Mansoura Bull. Sci., **8** (1982), 565-582.
- [10] M. A. Nasar and M. K. Aouf, *Starlike function of complex order*, J. Natur. Sci. Math., **25**, (1985),1-12.
- [11] M. S. Robertson, *On the theory of univalent functions*, Ann. Math.,**37**, (1936), 374-408.

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- [12] V. Ravichandran, Y. Polatoglu, M. Bolcal and A. Sen, *Certain subclasses of starlike and convex functions of complex order*, Hacettepe J. Math. Stat, **34** , (2005), 9-15.
- [13] C. Selvaraj, K. R. Karthikeyan and Lakshmi, *Coefficient estimates of new classes of  $q$ -starlike and  $q$ -convex functions of complex order with respect to  $(j, k)$ - symmetric points*, Rom. J. Math. Comput. sci. ,**7** (1), (2017), 29-40.
- [14] T. M. Seoudy and M. K. Aouf, *Coefficient estimates of new classes of  $q$ -starlike and  $q$ -convex functions of complex order*, JMI, **10** (2016),135-145.
- [15] L. Shi, H. M. Srivastava, M. G. Khan, N. Khan, B. Ahmad, B. Khan, W. K. Mashwani, *Certain Subclasses of Analytic Multivalent Functions Associated with Petal-Shape Domain*, *Axioms* **2021**, 10, Art. ID. 291.

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<sup>1</sup> DEPARTMENT OF MATHEMATICS, JSS ACADEMY OF TECHNICAL EDUCATION, SRINIVASPURA, BENGALURU - 560 060, INDIA.

<sup>2</sup> DEPARTMENT OF MATHEMATICS, VIDYAVARDHAKA COLLEGE OF ENGINEERING, MYSURU-570002, INDIA.

<sup>3</sup> DEPARTMENT OF MATHEMATICS, YUVARAJA'S COLLEGE, UNIVERSITY OF MYSORE, MYSORE - 570 005, INDIA.

*Email address:* <sup>1</sup> pnandinimaths@gmail.com, <sup>2</sup> dileepL84@vvce.ac.in,

<sup>3</sup> drlatha@gmail.com