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FEKETE-SZEGÖ PROBLEM FOR SOME SUBCLASSES OF HOLOMORPHIC FUNCTIONS DEFINED BY THE COMBINATION OF OPOOLA AND BABALOLA DIFFERENTIAL OPERATORS

TIMILEHIN GIDEON SHABA¹, MURAT ÇAĞLAR² AND HALIT ORHAN³

ABSTRACT. Inspired by the recent works of Çağlar and Orhan [5] and Kanas and Darwish [12], we obtain the coefficient estimates and Fekete-Szegő inequalities for some new subclasses of holomorphic functions defined by the combination of Opoola and Babalola differential operators.

REFERENCES

- [1] H. R. Abdel-Gawad, D.K. Thomas, *The Fekete-Szegő problem for strongly close-to-convex functions*, Proc. Am. Math. Soc. 114, (1992) 345-349.
- [2] F. M. Al-Oboudi, *On univalent functions defined by a generalized Sălăgean operator*, Int. J. Math. Math. Sci. 27, (2004) 1429-1436.
- [3] I. Al-Shbeil, T. G. Shaba, A. Cătaș, *Second Hankel determinant for the subclass of bi-univalent functions using q -Chebyshev polynomial and Hohlov operator*. Fractal and Fractional 6(4) (2022), 186.
- [4] K. O. Babalola, *New subclasses of analytic and univalent functions involving certain convolution operator*, Mathematica, Tome, 50, No. 73 (2008) 3-12.
- [5] M. Çağlar, H. Orhan, *Fekete-Szegő problem for certain subclasses of analytic functions defined by the combination of differential operator*. Bol. Soc. Mat. Mex. 27, No. 41 (2021) 1â€“12.
- [6] A. Chonweerayoot, D. K. Thomas, W. Upakarnitikaset, *On the Fekete-Szegő theorem for close-to-convex functions*. Publ. Inst. Math. (Beograd) (N.S.) 66, (1992) 18-26.
- [7] M. Darus, D. K. Thomas, *On the Fekete-Szegő theorem for close-to-convex functions*. Math. Jpn. 44, (1996) 507-511.
- [8] E. Deniz, H. Orhan, *The Fekete-Szegő problem for a generalized subclass of analytic functions*. Kyungpook Math. J. 50, (2010) 37-47.
- [9] E. Deniz, M. Çağlar, H. Orhan, *The Fekete-Szegő problem for a class of analytic functions defined by Dziok-Srivastava operator*. Kodai Math. J. 35, (2012) 439-462.
- [10] M. Fekete, G. Szegő, *Eine Bemerkung uber ungerade schlichte Funktionen*. J. Lond. Math. Soc. 8, (1933) 85-89.
- [11] H. Orhan, T. G. Shaba, M. Çağlar, *(P, Q)-Lucas polynomial coefficient relations of bi-univalent functions defined by the combination of Opoola and Babalola differential operator*. Afrika Matematika 33(1), (2022), 1-13.
- [12] S. Kanas, H.E. Darwish, *Fekete-Szegő problem for starlike and convex functions of complex order*. Appl. Math. Lett. 23 No. 7, (2010) 777-782.
- [13] F. R. Keogh, E. P. Merkes, *A coefficient inequality for certain classes of analytic functions*. Proc. Am. Math. Soc. 20, (1969) 8-12. doi:10.1090/S0002-9939-1969-0232926-9
- [14] W. Koepf, *On the Fekete-Szegő problem for close-to-convex functions*. Proc. Am. Math. Soc. 101, (1987) 89-95.
- [15] R. R. London, *Fekete-Szegő inequalities for close-to-convex functions*. Proc. Am. Math. Soc. 117, (1993) 947-950.

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- [16] W. Ma, D. Minda, *A unified treatment of some special classes of univalent functions*. In: Z. Li, F. Ren, L. Yang, S. Zhang, (eds.) *Proceeding of the International Conference on Complex Analysis*, pp. 157-169. Int. Press, Boston (1994).
- [17] T. O. Opoola, *On a subclass of univalent functions defined by a generalised differential operator*. Int. J. Math. Anal., 11 No. 18, (2017), 869-876.
- [18] H. Orhan, E. Deniz, M. Çağlar, *Fekete-Szegő problem for certain subclasses of analytic functions*. Demonstr. Math. 45 No. 4, (2012) 835-846.
- [19] H. Orhan, E. Deniz, D. Raducanu, *The Fekete-Szegő problem for subclasses of analytic functions defined by a differential operator related to conic domains*. Comput. Math. Appl. 59, (2010) 283-295.
- [20] H. Orhan, D. Raducanu, *Fekete-Szegő problem for strongly starlike functions associated with generalized hypergeometric functions*. Math. Comput. Model. 50, (2009) 430-438.
- [21] A. Pfluger, *The Fekete-Szegő inequality by a variational method*. Ann. Acad. Sci. Fenn. Ser. AI 10, (1984) 447-454.
- [22] Ch. Pommerenke, *Univalent functions*. In: *Studia Mathematica Mathematische Lehrbücher*, Vandenhoeck and Ruprecht, Gottingen (1975).
- [23] D. Raducanu, H. Orhan, *Subclasses of analytic functions defined by a generalized differential operator*. Int. J. Math. Anal. 4 No. 1, (2010) 1-15.
- [24] G. S. Sălăgean, *Subclasses of univalent functions*. In: Cazacu, C.A., Boboc, N., Jurchescu, M., Suciu, I. (eds.) *Complex Analysis-Fifth Romanian-Finnish Seminar*, pp. 363-372, Springer, Berlin (1983).
- [25] T. G. Shaba, *Subclass of bi-univalent functions satisfying subordinate conditions defined by Frasin differential operator*, Turkish Journal of Inequalities, 4 No. 2, (2020) 50-58.

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