Coefficient estimates for new classes of bi-univalent functions defined by Sălăgean integro-differential operator

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In this paper we introduce and investigate three new general classes of bi-starlike and bi-convex of Ma-Minda type functions defined by Sălăgean integro-differential operator. Bounds of the first three coefficients $|a_2|$, $|a_3|$ and $|a_4|$ are given.

References

[1] J.W. Alexander, *Functions which map the interior of the unit circle upon simple regions,* Ann. of Math. 17(1915), 12-22.

[2] R. M. Ali, S. K. Lee, V. Ravichandran, S. Subramaniam, *Coefficient estimates for bi-univalent Ma-Minda starlike and convex functions,* Appl. Math. Lett., 25,2012, pp. 344-351.

[3] S. Altinkaya, S. Yalcin, *Faber polynomial coefficient bounds for a subclass of bi-univalent functions,* C. R. Math. Acad. Sci. Paris, 353, 2015, pp. 1075-1080.

[4] D. A. Brannan, J. Clunie, W. E. Kirwan, *Coefficient estimates for a class of starlike functions,* Canad. J. Math., 22, 1970, pp. 476-485.

[5] P.L. Duren, *Univalent functions,* Grundlehren der Mathematischen Wissenschaften, Springer-Verlag, New York, Berlin, Hiedelberg and Tokyo, 1983.

[6] B. A. Frasin, M. K. Aouf, *New subclasses of bi-univalent functions,* Appl. Math. Lett., 24, 2011, pp. 1569-1573.

[7] J. M . Jahangiri, S .G. Hamidi, *Faber polynomial coefficient estimates for analytic bi-Bazilevič functions,* Matematicki Vesnik., 67, 2015, pp. 123-129.

[8] W. C. Ma, D. Minda, *A unified treatment of some special classes of functions,* in Proceedings of the Conference on Complex Analysis (Tianjin, 1992), pp. 157-169, Conference Proceedings Lecture Notes in Analysis, Vol. 1, International Press, Cambridge, Massachusetts, 1994.

[9] S. S. Miller, P. T. Mocanu, *Differential Subordinations. Theory and Applications,* Marcel Dekker Inc., New York, Basel, 2000.

[10] Ch. Pommerenke, *Univalent Functions,* Vanderhoeck and Ruprecht, Göttingen, 1975.

[11] G. S. Sălăgean, *Subclasses of univalent functions,* Lecture Notes in Math. (Springer Verlag), 1013(1983), pp. 362-372.

[12] A. Zireh, S. Hajiparvaneh, *Coefficient bounds for certain subclasses of analytic and bi-univalent functions,* Ann. Acad. Rom. Sci. Ser. Math. Appl., vol8, no 2/2016, pp. 133-144.

[13] M. Lewin, *On a coefficient problem for bi-univalent functions,* Proc. Amer. Math. Soc., 18, 1967, pp. 63-68.

[14] D. L. Tan, *Coefficient estimates for bi-univalent functions,* Chinese Ann. Math. Ser. A., 5,1984, pp. 559-568.

[15] L. Xiong, X. Liu, *Some Extensions of Coefficient Problems for Bi-Univalent Ma-Minda Starlike and Convex Functions,* Filomat 29:7 (2015), 1645-1650.

[16] Q. H. Xu, Y. -C. Gui, H. M. Srivastava, *Coefficient estimates for a certain subclass of analytic and bi-univalent functions,* Appl. Math. Lett., 25, 2012, pp. 990-994.

[17] Q. H. Xu, H. -G. Xiao, H. M. Srivastava, *A certain general subclass of analytic and bi-univalent functions and associated coefficient estimate problems,* Appl. Math. Comput., 218, 23, 2012, pp. 11461-11465.