ON A CERTAIN SUBCLASS OF MEROMORPHIC UNIVALENT FUNCTIONS WITH FIXED SECOND POSITIVE COEFFICIENTS

Firas Ghanim and Maslina Darus

Abstract. In the present paper, we consider the subclass of meromorphic univalent functions $S_p^*[k, \alpha, \beta, c]$ with fixed second positive coefficient. The object of the present paper is to show coefficient estimates, convex liner combinations, some distortion theorems, and redii of starlikeness and convexity for $f(z)$ in the class $S_p^*[k, \alpha, \beta, c]$.

Full text

References

[1] M. K. Aouf, *On a certain class of meromorphic univalent functions with positive coefficients*, Rend. Mat. Appl., **7** 11 (1991), no. 2, 209-219. MR1122335. Zbl 0745.30011.

[2] M. K. Aouf and H. E. Darwish, *Certain meromorphically starlike functions with positive and fixed second coefficients*, Tr. J. of Mathematics **21** (1997), 311- 316. Zbl 0887.30014.

[3] S. K. Bajpai, *A note on a class of meromorphic univalent functions*, Rev. Roum. Math. Pures Appl. **22** (1977), 295 -297. MR447546. Zbl 0354.30006.

[4] N. E. Cho, S. H. Lee, and S. Owa, *A class of meromorphic univalent functions with positive coefficients*, it Kobe J. Math. **4** (1987), 43-50. Zbl 0639.30010 Zbl 0639.30010.

[5] J. Clunie, *On meromorpic schlicht functions*, J. Lond. Math.Soc. **34** (1959), 215-216. MR215737. Zbl 0087.07704.

[6] P. L. Duren, *Univalent Functions*, New York, Springer-Verlag, 1983.

[7] B. A. Frasin and M. Darus, *On certain meromorphic functions with positive coefficients*, Southeast Asian Bull. Math. **28** (2004), 615-623. MR2086021. Zbl 1069.30016.

[8] F. Ghanim and M. Darus, *On certain subclass of meromorphic univalent functions with fixed residue α*, Far East J. Math. Sci. (FJMS), **26** (2007), 195-207. Zbl 1133.30305.

[9] F. Ghanim and M. Darus, *A new subclass of uniformly starlike and convex functions with negative coefficients. II*, Int. J. Pure Appl. Math. **45** (4) (2008), 559-572. MR2426233. Zbl 1151.30316.

[10] R. M. Goel and N. S. Sohi, *On a class of meromorphic functions*, Glas. Mat., III. Ser. **17** (37) (1982), 19-28. Zbl 0504.30005.

[11] Jinxi Ma, *Extreme points and minimal outer area problem for meromorphic univalent functions*, J. Math. Anal. Appl. **220 (2)** (1998), 769-773. MR1614960. Zbl 0911.30009.

[12] J. Miller, *Convex meromorphic mappings and related functions*, Proc. Am. Math. Soc. **25** (1970), 220-228. Zbl 0196.09202.

[13] Z. Nehari and E.Netanyahu, *On the coefficients of meromorphic schlicht functions*, Proc. Am. Math. Soc. **8** (1957), 15-23. Zbl 0079.10004.

[14] Ch. Pommerenke, *Über einige Klassen meromorpher schlichter Funktionen*, Math. Z. **78** (1962), 263-284. #1285).

[15] Ch. Pommerenke, *On meromorphic starlike functions*, Pac. J. Math. **13** (1963), 221-235. MR0150279(27 #280). Zbl 0116.05701.

[16] W. C. Royster, *Meromorphic starlike multivalent functions*, Trans. Am. Math. Soc. **107** (1963), 300-308. MR0148895(26 #6392). Zbl 0112.05101.

[17] G. Schober, *Univalent Functions - Selected Topics*, Lecture Notes 478, Berlin-Heidelberg - New York: Springer, 1975. MR0507770(58 #22527).

[18] H. Silverman and E. M. Silvia, *Fixed coefficients for subclasses of starlike functions*, Houston J. Math. **7** (1981), 129-136. MR0628498(83d:30014). Zbl 0461.30010.

[19] H. M. Srivastava and S. Owa, *Current Topics In Analytic Functions Theory*, World Scientific, Singapore, 1992. MR1232424(94b:30001).

[20] B. A. Uralegaddi, *Meromorphically starlike functions with positive and fixed second coefficients*, Kyungpook Math. J. **29 (1)** (1989), 64-68. Zbl 0707.30008.

[21] B. A. Uralgaddi and M. D. Ganigi, *A certain class of meromorphically starlike functions with positive coefficients*, Pure Appl. Math. Sci. **26** (1987), 75-81. Zbl 0638.30014.

[22] B. A. Uralegaddi and C. Somanatha, *Certain differential operators for meromorphic functions*, Houston J. Math. **17** (1991), 279-284. MR1115149(92j:30019). Zbl 0749.30016.

[23] B. A. Uralegaddi and C. Somanatha, *New criteria for meromorphic starlike univalent functions*, Bull. Austral. Math. Soc. **43** (1991), 137-140. MR1086726(92j:30018).

Firas Ghanim
School of Mathematical Sciences,
Faculty of Science and Technology,
Universiti Kebangsaan Malaysia,
Bangi 43600 Selangor D. Ehsan, Malaysia.
e-mail: firas.zangnaa@Gmail.com

Maslina Darus
School of Mathematical Sciences,
Faculty of Science and Technology,
Universiti Kebangsaan Malaysia,
Bangi 43600 Selangor D. Ehsan, Malaysia.
e-mail: maslina@ukm.my

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