ON A CLASS OF MEROMORPHIC FUNCTIONS DEFINED BY USING A FRACTIONAL OPERATOR

ESZTER GAVRIŞ

Abstract. We introduce a class of meromorphic functions $SD_{\lambda}^{\nu,n}(\alpha)$ using the fractional operator

$$\mathcal{D}_{\lambda}^{\nu,n}f(z) = \frac{1}{z} + \sum_{k=0}^{\infty} \frac{(\nu+1)_{k+1}}{(2-\lambda)_{k+1}} (k+2)^{n+1} a_k z^k,$$

 $-\infty < \lambda < 2, \nu > -1, n \in \mathbb{N}_0 = \{0, 1, 2, \cdots\}$. Some inclusion relations and other properties of the class are investigated.

MSC 2010. 30C45.

Key words. Meromorphic function, fractional operator, integral operator.

REFERENCES

- F.M. Al-Oboudi and H.A. Al-Zkeri, On some classes of meromorphic starlike functions defined by a differential operator, Global Journal of Pure and Applied Mathematics, 3 (2007), 1–11.
- N.E. Cho and J.A. Kim, On certain classes of meromorphically starlike functions, Int. J. Math. Math. Sci., 18 (3) (1995), 463–468.
- [3] I.S. Jack, Functions starlike and convex of order α , J. Lond. Math. Soc., **3** (1971), 469–474.
- [4] S.S. Miller and P. T. Mocanu, Second order differential inequalities in the complex plane, J. Math. Anal. Appl., 65 (1978), 289–305.
- [5] P. Sharma, R.K. Raina and G.S. Sălăgean, Some geometric properties of analytic functions involving a new fractional operator, Mediterr. J. Math., 13 (2016), 4591–4605.
- [6] B. A. Uralegaddi and C. Somanatha, New criteria for meromorphic starlike univalent functions, Bull. Aust. Math. Soc., 43 (1991), 137–140.

Received August 1, 2019	Babeş-Bolyai University
Accepted December 4, 2019	Faculty of Mathematics and Computer Science
	Department of Mathematics
	Cluj-Napoca, Romania
	<i>E-mail:</i> szatmari.eszter@math.ubbcluj.ro

The author thanks the referee for his helpful comments and suggestions.

DOI: 10.24193/mathcluj.2021.1.07