

ON A CERTAIN CLASS OF HARMONIC
MEROMORPHIC FUNCTIONS

SAEID SHAMS and S. R. KULKARNI

Abstract. In the present paper we introduce a class of harmonic meromorphic functions in the exterior of the unit disc with the condition $f(\infty) = \infty$ that are univalent and sense preserving, also the properties of this class such as coefficient inequality, distortion, convex combination, convolution are obtained.

MSC 2000. 30C45, 30C50.

Key words. Harmonic, univalent, meromorphic, sense preserving.

REFERENCES

- [1] CLUNIE, J. and SHEIL SMALL, T., *Harmonic univalent functions*, Ann. Acad. Sci. Fenn. Ser. A. I. Math. (1984), 3–25.
- [2] HENGARTNER, W. and SCHÖBER, G., *Univalent harmonic functions*, Trans. Amer. Math. Soc., **299** (1987), 1–31.
- [3] JAHANGIRI, J. M., *Coefficient bounds and univalence criteria for harmonic functions with negative coefficients*, Ann. Univ. Mariae - Curie - Skłodowska, **52** (1998), 57–66.
- [4] JAHANGIRI, J. M., *Harmonic functions starlike in the unit disc*, J. Math. Anal. Appl., **235** (1999), 470–477.
- [5] JAHANGIRI, J. M. and SILVERMAN, H., *Harmonic close-to-convex mappings*, J. Appl. Math. Stoch. Anal. (To appear).
- [6] JAHANGIRI, J. M. and SILVERMAN, H., *Meromorphic univalent harmonic functions with negative coefficients*, Bull. Korean Math. Soc., **36** (1999) 763–770.
- [7] JAHANGIRI, J. M., *Harmonic meromorphic starlike functions*, Bull. Korean Math. Soc., **37**, no. 2 (2000).
- [8] LEWY, H., *On the non-vanishing of the Jacobian in certain one-to-one mapping*, Bull. Amer. Math. Soc., **42** (1936), 689–710.
- [9] ROSY, T., ADOLPH STEPHEN, B., SUBRAMANIAN, K.G., JAHANGIRI, J. M., *Goodman-Rønning type harmonic univalent functions*, Kyungpook Math. J. **41** (2001), 45–54.
- [10] ROSY, T., STEPHEN, B.A., SUBRAMANIAN, K. G. and JAHANGIRI, J. M., *A class of harmonic meromorphic functions* (To appear in Tamkang J. Math.).
- [11] SHAMS, S. and KULKARNI, S. R., *On a class of univalent starlike functions* (communicated for publication).

Received June 20, 2003

Department of Mathematics,
Fergusson College, Pune - 411004, India
E-mail: sa40shams@yahoo.com
E-mail: kulkarni_ferg@yahoo.com