

ON AN APPLICATION OF VIETORIS'S INEQUALITY

JANUSZ SOKÓŁ AND PAWEŁ WITOWICZ

Abstract. The radius of starlikeness for polynomials with zeroes distributed at certain curves in the unit disc as well as the case in which zeroes are concentrated at a single point are considered and sharp bounds are obtained.

Mathematics subject classification (2010): Primary 30C45; Secondary 30C80.

Keywords and phrases: Univalent functions, starlike functions, Vietoris's inequality.

REFERENCES

- [1] J. W. ALEXANDER, *Functions which map the interior of the unit disc upon simple regions*, Ann. of Math. **17** (1915), 12–22.
- [2] G. BROWN, F. DAI, K. WANG, *Extensions of Vietoris's inequalities I*, Ramanujan J. **14** (2007), 471–507.
- [3] G. ENESTRÖM, *Remarque sur un Théorème relatif aux racines d'équation $a_n x^n + \dots + a_0 = 0$ où tous les coefficients sont réels et positifs*, Tôhoku Math. J. **18** (1920), 34–36.
- [4] A. GLUCHOFF, F. HARTMANN, *Starlikeness of polynomials and finite Blaschke products*, Ann. Polon. Math., **93** (2008), 187–196.
- [5] H. GRUNSKY, *Zwei Bemerkungen zur konformen Abbildung*, Jber. Deutsch. Math. Ver. **43** (1933), 140–143.
- [6] S. KOUMANDOS, *An extension of Vietoris's inequalities*, Ramanujan J. **14** (2007), 1–38.
- [7] R. NEVANLINNA, *Über die konforme Abbildung Sterngebiete*, Oversikt av Finska-Vetenskaps Societen Forhandlingar **63** (A) 6 (1921), 48–403.
- [8] L. VIETORIS, *Über das Vorzeichen gewisser trigonometrischer Summen*, Sitzungsber. Öst. Acad. Wiss. Math.-Natur. Kl. S.-B. II **167** (1958), 125–135.