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On a simple sufficient condition for starlikeness. (English) Zbl 0716.30003
Math., Rev. Anal. Numér. Théor. Approximation, Math. 31(54), No. 2, 97-101 (1989).

Let f be an analytic function in the unit disc $U = \{z \in \mathbb{C}, |z| < 1\}$ with $f(0) = 0$. The basic result of the paper is the following sufficient condition for starlikeness: If f satisfies the inequality

$$|f''(z)/f'(z)| \leq M^*, \quad z \in U, \text{ where } M^* = \sqrt{1 + y^2} = 2.83\dots,$$

y is the smallest positive root of the equation $y \sin y + \cos y = 1/e$, then f is starlike. The bound M^* cannot be replaced by any larger number.

Reviewer: [St.Walczak](#)

MSC:

- 30C45** Special classes of univalent and multivalent functions of one complex variable (starlike, convex, bounded rotation, etc.)
- 30C75** Extremal problems for conformal and quasiconformal mappings, other methods
- 30C80** Maximum principle, Schwarz's lemma, Lindelöf principle, analogues and generalizations; subordination

Cited in **1** Review
Cited in **2** Documents

Keywords:

starlikeness