

## Sharp inequalities for the coefficients of concave schlicht functions

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### Abstract

Let  $D$  denote the open unit disc and let  $f: D \rightarrow \mathbb{C}$  be holomorphic and injective in  $D$ . We further assume that  $f(D)$  is unbounded and  $\mathbb{C} \setminus f(D)$  is a convex domain. In this article, we consider the Taylor coefficients  $a_n(f)$  of the normalized expansion  $f(z) = z + \sum_{n=2}^{\infty} a_n(f)z^n$ ,  $z \in D$ ,  $n \geq 2$  and we impose on such functions  $f$  the second normalization  $f(1) = \infty$ . We call these functions concave schlicht functions, as the image of  $D$  is a concave domain. We prove that the sharp inequalities  $|a_n(f)| - n + 1/2 \leq n - 1/2$ ,  $n \geq 2$ , are valid. This settles a conjecture formulated in [2]. © Swiss Mathematical Society.

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### Keywords

Concave schlicht functions, Slit mappings, Taylor coefficients