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# Uniform and pointwise polynomial inequalities in regions with cusps in the weighted Lebesgue space<sup>†</sup>

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## Abstract

In this work, we study the estimation of the modulus of algebraic polynomials in the bounded and unbounded regions with piecewise-quasicircle in the weighted Lebesgue space.

**Keywords:** algebraic polynomials, conformal mapping, quasiconformal mapping, quasicircle.

**MSC:** Primary 30A10, 30C10; Secondary 41A17.

## §1. Introduction and Definitions

Let  $\mathbb{C}$  be the complex plane,  $\overline{\mathbb{C}} := \mathbb{C} \cup \{\infty\}$  and let  $G \subset \mathbb{C}$  be a bounded region, with  $0 \in G$  and such that the boundary  $L := \partial G$  is a Jordan curve,  $\Omega := \overline{\mathbb{C}} \setminus \overline{G} = extL$ . Denote by  $w = \Phi(z)$  the univalent conformal mapping of  $\Omega$  onto  $\Delta := \{w : |w| > 1\}$  with normalization  $\Phi(\infty) = \infty$ ,  $\lim_{z \rightarrow \infty} \frac{\Phi(z)}{z} > 0$  and  $\Psi := \Phi^{-1}$ .

<sup>†</sup>The corresponding author is also known as F.G.Abdullaev. The authors thank the referees for their valuable contributions.

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