

n^2 vs $n^?$

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We denote by $\mathcal{P}_n(\mathbb{R}^d)$ the space of all polynomials of d real variables with real coefficients of degree at most n . Let $K \subset \mathbb{R}^d$ be a compact set with non-empty interior. The n th order Markov factor of K is defined by

$$M_{n,p}(K) := \sup \left\{ \frac{\|D^\alpha P\|_{L_p(K)}}{\|P\|_{L_p(K)}} : P \in \mathcal{P}_n(\mathbb{R}^d), P \neq 0, |\alpha| = 1 \right\}.$$

The purpose of this talk is to study the magnitude of $M_{n,p}$ for a certain family of domains with cusps.