

ON NORMS OF FACTORS OF MULTIVARIATE POLYNOMIALS ON CONVEX BODIES*

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Dedicated to Ed Saff on the occasion of his 60th birthday

Abstract. Estimation of norms of factors of polynomials is a widely investigated extremal problem with numerous applications in functional analysis, number theory, approximation theory. In this note we study the following problem: let K be a convex body in \mathbb{R}^d and consider a product of polynomials qr , where q is arbitrary and r is a monic multivariate polynomial. The goal is to find an upper bound for the uniform norm of q on K provided that such bound for qr is known.

Key words. multivariate polynomials, norms of factors, convex bodies

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