Electronic Transactions on Numerical Analysis.
Volume 25, pp. 201-205, 2006.
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ISSN 1068-9613.

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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

AMS subject classification. 41A17, 41A63

*Received July 11, 2005. Accepted for publication November 28, 2005. Recommended by I. Pritsker. Supported by the OTKA Grant T049196. This paper was partially written during the author's visit at the Center of Constructive Approximation, Vanderbilt University, Nashville, TN, USA.
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