

WEIGHTED SUMS OF LOG-CONCAVE RANDOM VECTORS AND VECTOR BALANCING PROBLEMS

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ABSTRACT. We discuss lower and upper bounds for the multi-integral expression

$$\|\mathbf{t}\|_{C^s, K} = \int_C \cdots \int_C \left\| \sum_{j=1}^s t_j x_j \right\|_K dx_1 \cdots dx_s$$

where C is an isotropic convex body and K is a symmetric convex body of volume 1 in \mathbb{R}^n . We also present some applications to “randomized” vector balancing problems.