1161-52-143 **Giorgos Chasapis***, gchasapi@andrew.cmu.edu, and **Apostolos Giannopoulos** and **Nikos Skarmogiannis**. *Norms of weighted sums of log-concave random vectors.*

Given two centrally symmetric convex bodies $C$ and $K$ of volume 1 in $\mathbb{R}^n$, we study the multi-integral expression

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

where $\mathbf{t} = (t_1, \dots, t_s) \in \mathbb{R}^s$. An old question by V. Milman in the pursuit of a generalized Khintchine-type inequality is whether $\|\mathbf{t}\|_{K^s,K}$ is actually equivalent to the Euclidean norm $\|\mathbf{t}\|_2$, up to a term which is logarithmic in the dimension. We discuss general upper bounds for $\|\mathbf{t}\|_{C^s,K}$ in the case that $C$ is isotropic, that can be further tightened when $C = K$ under certain uniform convexity or cotype assumptions on $(\mathbb{R}^n, \|\cdot\|_K)$. Our approach also yields a new proof of the sharp lower bound on $\|\mathbf{t}\|_{C^s,K}$ provided in an earlier work of Gluskin and Milman. Based on joint work with A. Giannopoulos and N. Skarmogiannis. (Received August 15, 2020)