

Kahane-Khinchin type Averages

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We prove a Kahane-Khinchin type result with a few random vectors, which are distributed independently with respect to a log-concave measure. This is an application of small ball estimate and Chernoff's method, that has been recently used in the context of Asymptotic Geometric Analysis. It is well known that Kahane-Khinchin inequality can be generalized by replacing the Rademachers by random vectors, which are distributed independently with respect to a log-concave probability measure in \mathbb{R}^n . We ask whether in this case, we may use *only* N random vectors, where $N = (1 + \delta)n$ and $\delta > 0$ is any small positive number, to approximate the corresponding expectation, up to a constant depending only on δ .