Title：Beyond Characteristic Function Method to Get Exponential Concentration Bound

Abstract：By combining tail bounds with Markov Inequality, we show an exponential concentration bound for random variables whose density function is the Fourier transform of an analytic function, which traditional characteristic function bound can’t handle. As an application, we show that kernel methods with a shift invariant and analytic kernel can be compressed to polylog(n) dimension within 1+ε multiplicative error, indicating a near linear time approximate algorithm for kernel method.

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