

1020-60-82

Bernard Bercu and **Włodzimierz Bryc*** (brycw@math.uc.edu), Department of Mathematical Sciences, University of Cincinnati, 2855 Campus Way, Cincinnati, OH 45221-0025. *Asymptotic results for empirical measures of weighted sums of independent random variables.*

We prove that if a rectangular $r \times n$ matrix with uniformly small entries and approximately orthogonal rows is applied to the independent standardized random variables with uniformly bounded third moments, then the empirical CDF of the resulting partial sums converges to the normal CDF with probability one. This implies almost sure convergence of empirical periodograms, almost sure convergence of spectra of circulant and reverse circulant matrices, and almost sure convergence of the CDF's generated from independent random variables by independent random orthogonal matrices.

For special trigonometric matrices, the speed of the almost sure convergence is described by the normal approximation and by the large deviation principle. (Received August 16, 2006)