ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

12. Probability and Statistics

1991 MS Classification: 60B15, 33C25
Voit, Michael, Universität Tübingen, Germany

Ultraspherical expansions and central limit theorems for unit spheres.

Distributions of rotation-invariant random walks on unit spheres may be studied in terms of their projections on the interval $[0, \pi]$ and then using trigonometric ultraspherical expansions. In particular, Fejér-type kernels for ultraspherical expansions lead to Berry-Esséen-type "spherical" central limit theorems. Under weak assumptions, one even obtains uniform convergence of densities (instead of distribution functions) in the spherical central limit theorem. In both cases, there exist associated Edgeworth expansions. Part of these results is joint work with G. Pap.

Reference: M. Voit, Rates of convergence to Gaussian measures on n-spheres and Jacobi hypergroups, *Ann. Probab.* **25** (1997) 457-477.