

“Stochastic geometry and stochastic analysis: Poisson U-statistics”

Abstract:

Assume that X is a Poisson point process. A Poisson U-statistic with kernel f is the sum of $f(x_1, \dots, x_k)$ over all k -tuples of X . Poisson U-statistics play an important role in Stochastic Geometry. Many functionals of interest can be written as U-statistics. We investigate some elementary properties of Poisson U-statistics, and the limit behaviour of Poisson U-statistics, central limit theorems and concentration inequalities.