INSALATE DI MATEMATICA

presents

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Gaussian Approximation for Poisson Functionals

Abstract:

Imagine there is a collection of random points in space and a functional of this collection, for example the total length of some graph built on it. The question arises whether this functional can be adequately approximated by the Gaussian normal law when the collection of points is very large. In this talk, we will make precise what we mean by 'random points in space' (spoiler: a Poisson measure), we will define being 'adequately approximated' and most importantly, we will present a method of proving said adequate approximation, using a technique with a clear geometric interpretation given our Poisson measure and functional. Time permitting, we will briefly mention recent work that reduces the assumptions required in order to apply the method.

Keywords: Poisson measure · central limit theorem · normal approximation

Dipartimento di Matematica e Applicazioni

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"Obvious" is the most dangerous word in mathematics.
(Eric Temple Bell)