NON-CENTRAL LIMIT THEOREMS ON THE POISSON SPACE

RONAN HERRY

University of Luxembourg

e-mail: ronan.herry@uni.lu

The central limit theorem asserts that the Gaussian distribution is the universal limit of many probabilistic models. Using tools from Malliavin calculus such a universal behaviour can be deduced for functionals of a Gaussian field [2] and of a Poisson process [1]. As a part of my PhD, I showed that for functionals of a Poisson point process, these techniques can be adapted to allow limits that are Gaussian mixtures. Using this approach, I was able to study finely the asymptotic behaviour of models arising, e.g. in stochastic geometry (in particular geometric random graphs) or from the theory of stochastic processes (in particular, Volterra processes with respect to an independently scattered random measure). In my talk, I will focus on a particular example of geometric random graph whose the number of edges behaves assymptotically as a Gaussian mixture.

Acknowledgement I thank Christian Döbler, Giovanni Peccati and Matthias Schulte for encouraging discussions and remarks during the preparation of this project.

References
