

# Lower variance bounds for Poisson functionals

*Thursday, 4 August 2022 16:00 (20 minutes)*

Lower bounds for variances are often needed to derive central limit theorems. In this talk, we establish a specific lower bound for the variance of a Poisson functional that uses the difference operator of Malliavin calculus.

Poisson functionals, i.e. random variables that depend on a Poisson process, are widely used in stochastic geometry. In this talk, we show how to apply our lower variance bound to statistics of spatial random graphs, the  $L^p$  surface area of random polytopes and the volume of excursion sets of Poisson shot noise processes. This talk is based on joint work with M. Schulte.

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