

Nonparametric Inference for Poisson-Laguerre Tessellations

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Abstract

In this talk, we consider statistical inference for Poisson-Laguerre tessellations in \mathbb{R}^d . The object of interest is a distribution function F which describes the distribution of the arrival times of the generator points. The function F uniquely determines the intensity measure of the underlying Poisson process. Two nonparametric estimators for F are introduced which depend only on the points of the Poisson process which generate non-empty cells and the actual cells corresponding to these points. The proposed estimators are proven to be strongly consistent, as the observation window expands unboundedly to the whole space. We also consider a stereological setting, where one is interested in estimating the distribution function associated with the Poisson process of a higher dimensional Poisson-Laguerre tessellation, given that a corresponding sectional Poisson-Laguerre tessellation is observed.