

20th Workshop on Stochastic Geometry, Stereology and Image Analysis

2–7 June, 2019, Sandbjerg Estate, Denmark

Abstract



Zbyněk Pawlas

Limit theorems for marked particle processes

By a marked particle process we understand a simple point process in $\mathcal{K}' \times \mathbb{M}$, where \mathcal{K}' denotes the space of non-empty compact subsets of \mathbb{R}^d and \mathbb{M} denotes the mark space. For stationary marked particle processes the intensity describes the mean number of particles (grains) per unit volume and the grain-mark distribution describes the joint distribution of a typical particle and its corresponding mark. We consider the estimators of these first-order characteristics and investigate their asymptotic behaviour as the observation window is expanding. For several particular models we are mainly interested in weak or strong consistency, variance asymptotics and asymptotic normality.