

# Minimax regression estimation for Poisson coprocess

Gaspar Massiot

For a Poisson point process  $X$ , Ito's famous chaos expansion implies that every square integrable regression function  $r$  with covariate  $X$  can be decomposed as a sum of multiple stochastic integrals called chaos. In this paper, we consider the case where  $r$  can be decomposed as a sum of  $\delta$  chaos. In the spirit of Cadre and Truquet (2015), we introduce a semiparametric estimate of  $r$  based on i.i.d. copies of the data. We investigate the asymptotic minimax properties of our estimator when  $\delta$  is known. We also propose an adaptive procedure when  $\delta$  is unknown.