ESTIMATION OF THE PERIODIC FUNCTION IN THE MULTIPLICATIVE INTENSITY MODEL

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Abstract: Given a point process $\{N(t), t \geq 0\}$ with the stochastic intensity $\lambda(t)$ of the form $\lambda(t) = \alpha_0(t)Y(t)$, it is shown that using the sieves technique one can construct a strongly consistent maximum likelihood estimator of the functional factor $\alpha(t)$. The latter is assumed to be periodic with the known period $T = 1$, and the "censoring process" $Y(t)$ fulfills some mild regularity assumptions. As an easy consequence it follows that the maximum likelihood estimator (MLE) can similarly be computed if $\{N^{(i)}(t), t \in [0,1], i = 1, 2, ...\}$ are not independent and identically distributed but satisfy some mixing conditions.

This paper extends the results of Karr [13].

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