

Estimation of the mixing distribution in Poisson mixture models via factorial moments

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We construct a consistent estimator of the mixing distribution function in Poisson mixture models for the case of n iid random variables. This estimator is based on a kind of Laplace inversion via factorial moments. We show that the rate of convergence of the integrated mean square error of our estimator is a power of $\log n$ and that there does not exist an estimator for which this rate can be better than a(nother) power of $\log n$.

We will explain how our research has been motivated by *the statistical analysis of a large number of rare events* by Khmaladze (1988) and Khmaladze and Chitashvili (1989, 1995).