A ZERO FREQUENCY ALTERNATIVE METHOD TO THE MOMENT
METHOD OF ESTIMATION IN FINITE POISSON MIXTURES

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abstract

The method of moments (MM) has been widely used for parametric estimation, as it is often computationally simple. Our interest focuses on the case of finite Poisson mixtures. The inefficiency of the method of moments relative to the Maximum Likelihood (ML) method is studied. Both the asymptotic efficiency as well as the small sample efficiency is examined. The case of samples that fail to lead to MM estimates is also considered. The results discourage the use of the MM estimators for two reasons; the first is that they are inefficient relative to the ML estimators and the second is the high probability of failing to lead to valid estimates. Another method, which considers replacing the third moment by the zero frequency, is examined. This method turns out to be more efficient than the moment method and not very demanding computationally.

keyword(s)

Moment problem, Zero frequency method, Efficiency,