Robust estimation for general integer-valued time series models

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Abstract

In this study, we consider a robust estimation method for general integer-valued time series models whose conditional distribution belongs to the one-parameter exponential family. As a robust estimator, we employ the minimum density power divergence estimator, and we demonstrate this is strongly consistent and asymptotically normal under certain regularity conditions. A simulation study is carried out to evaluate the performance of the proposed estimator. A real data analysis using the return times of extreme events of the Goldman Sachs Group stock is also provided as an illustration.

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