Comparing Entropy and Energy Goodness-of-fit test for Lévy Distribution

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The main restriction in a parametric method is the assumption of knowing population distribution. However, there is no parametric test for testing population distribution. Goodness-of-fit tests (GFT) are introduced as a non-parametric tool as a solution of this problem. GFT has a long history. Vasicek (1976), for the first time, proposed a GFT based on entropy and it extended by Gokhale (1983) and Ebrahimi et al. (1992) in two different directions. After these contributions many papers dedicate to the application or improvement of GFTs. Behind of the well the known GFTs, recently a GFT based on energy statistics (e.g. Székely and Rizzo (2013)) is proposed for testing heavy tailed Lévy stable distributions, Yang (2012). In this work, we introduced a modified entropy base GFT for Lévy distribution. We compare the power of the proposed test with the entropy and energy GFTs through a Monte Carlo simulation.

References


