

Title: Maximum likelihood estimators and their approximations

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Abstract: Maximum likelihood estimators method is one of the most effective and accurate methods that was used for estimation distributions and parameters. In this work we will find out the pros and cons of this method and will compare it with other estimation models. In the theoretical part we will review important theorems and definitions for creating common solution algorithms and for processing the real data. In the practical part we will use the MLE on the case study distributions for estimating the unknown parameters. In the final part we will apply this method on the real price data of EEX A. G, Germani. Also we will compare this method with other typical methods of estimation distributions and parameters and chose the best distribution. All tests and estimators will be provided by Mathematica software.

Keywords: parametr estimates, Maximum Likelihood estimators, MLE, Stable distribution, Characteristic function, Pearson's chi-squared test, Rao-Crámer.