

Different measures of similarity for multivariate elliptically contoured distributions.

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1 Introduction

The connection between Pearson correlation and sign correlation is investigated for elliptically contoured distributions. A mixture of multivariate normal distribution and multivariate Student distribution is considered as a model of simultaneous behavior of stock returns of financial market. Stability of statistical estimations of Pearson and sign correlations is compared for the model. Some structural characteristics of complete weighted graph are considered. Construction problem of these characteristics as multiple decision statistical procedure is formulated. Stability of such procedures is measured by conditional risk. It is shown that statistical procedures based on sign correlation are stable with respect to parameters of mixture of multivariate normal distribution and multivariate Student distribution.

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