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Contents

This approach is based on statistical multiple decision theory. It is shown that network characteristics in Pearson correlation network are not robust. In contrast stable measure of similarity in the class of elliptically contoured distribution is proposed. This measure is based on probability of signs coincidence of random variables. Optimal statistical procedures for network characteristic identification are proposed. The statistical uncertainty of some popular network structures is investigated and compared for different financial markets. Some results in this direction are presented in [3, 4].

Keywords: market network analysis, statistical inference.

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Fractal and Antifractal Oxymorons, Moebius Strip Like Transformations of Biomedical Data as Basis for Exploratory Subgroup Analysis

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Abstract

Proposed and tested an algorithm of using fractal and antifractal oxymorons, Moebius strip like transformations of biomedical data for exploratory subgroup analysis. The algorithm is reduced to initialization of study objects with fractal and antifractal data, Moebius strip like structure; formation of categorical variabilities that consist from informative numeric variabilities as sum of progradient and antigradient data, including similar to "superior and inferior surfaces of strip", by iteration process as for receiving fractal and antifractal sets; statistical analysis of categorical variabilities and dependent numeric variabilities, using parametric and nonparametric methods; formulation of the conclusion. Our algorithm of using fractal and antifractal oxymorons, Moebius strip

like transformations of biomedical data for exploratory analysis will help to uncover "re-entry" mechanisms of pathology, principles of prophylaxis and treatment chronic aging-dependent diseases.

Keywords: Antifractal, Fractal, Exploratory analysis, Moebius strip

Restricted ridge estimation of generalized linear models

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Abstract

Multicollinearity has long been recognized as a problem in estimating the parameters in linear regression models producing least squares estimates that are too large in absolute value and resulting in large variance-covariance matrix for the least squares estimator. The adverse effects of multicollinearity on parameter estimation in generalized linear models are also explored by various authors [1,4] in the case of maximum likelihood estimation. Segerstedt [4] proposed the ordinary ridge regression estimator and Nyquist [2] considered the restricted estimator of parameters in generalized linear models in the presence of multicollinearity.

In this study, we introduce restricted ridge estimator by unifying the ordinary ridge regression estimator and the restricted estimator in generalized linear models. The superiority of the restricted ridge estimator over the maximum likelihood and restricted estimators is considered according to the mean squared error matrix criterion. The results are illustrated by conducting a simulation study.

Keywords: Restricted ridge, Generalized linear model, Multicollinearity, Mean squared error

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