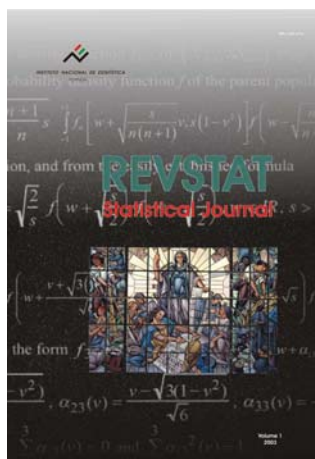


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In 2003 the National Statistical Institute launched the scientific statistical journal **REVSTAT-STATISTICAL JOURNAL**, published in English two times a year, with a prestigious international Editorial Board, which came to substitute the *Revista de Estatística* [Statistical Review], published in Portuguese between 1996 and 2002.

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This Volume of **REVSTAT: Volume 3, No. 2–November 2005**, which is now come out, publish four articles of which abstracts are presented down:

ANALYSIS OF DYNAMIC PROTEIN EXPRESSION DATA

Author: *Klaus Jung, Ali Gannoun and Wolfgang Urfer*

Difference gel electrophoresis (DIG E) is the new gold standard analysing complex protein mixtures in proteomics. It is used for measuring the expression levels of proteins in different mixtures on the same two-dimensional electrophoresis (2-DE) gel. In this paper we review a method for the calibration and normalization of those protein expression measurements. Further we show how to find treatment effects and time-treatment-interactions in longitudinal data obtained from DIGE experiments. A problem in those data sets is the existence of a lot of missing values. Therefore, we propose a method for the estimation of missing data points.

DIRECT REDUCTION OF BIAS OF THE CLASSICAL HILL ESTIMATOR

Authors: *Frederico Caeiro, M. Yvette Gomes and Dinis Pestana*

In this paper we are interested in an adequate estimation of the dominant component of the bias of Hill's estimator of a positive tail index γ , in order to remove it from the classical Hill estimator in different asymptotically equivalent

ways. If the second order parameters in the bias are computed at an adequate level k_1 of a larger order than that of the level k at which the Hill estimator is computed, there may be no change in the asymptotic variances of these reduced bias tail index estimators, which are kept equal to the asymptotic variance of the Hill estimator, i.e., equal to γ^2 . The asymptotic distributional properties of the proposed estimators of γ are derived and the estimators are compared not only asymptotically, but also for finite samples through Monte Carlo techniques.

MIXED EFFECTS IN STOCHASTIC DIFFERENTIAL EQUATION MODELS

Authors: *Susanne Ditlevsen and Andrea De Gaetano*

A class of statistical models is proposed where random effects are incorporated into a stochastic differential equations model, and an expression for the likelihood function is derived. In general, though, it is not possible to find an explicit expression for the likelihood function, but in a very simple example it is derived and explicit maximum likelihood estimators are found. The estimators are evaluated in a simulation study, and illustrated on dissolution data of metoprolol tartrate tablets.

A NON-PARAMETHIC TEST FOR NON-INDEPENDENT NOISES AGAINST A BILINEAR DEPENDENCE

Authors: *E. Gonçalves, P. Jacob and N. Mendes-Lopes*

A new methodology, based on the asymptotic separation of probability laws, was introduced by Gonçalves, Jacob and Mendes-Lopes (2000) in the development of the statistical inference of bilinear models, namely in the construction of a consistent decision procedure for the simple bilinear ones.

This paper presents a generalisation of that study by introducing in the procedure a smoother decision statistics.

The aim of this decision method is to discriminate between an error process and a simple bilinear model. So, we use it as a consistent test, its consistence being obtained by establishing the asymptotic separation of the sequences of probability laws defined by each hypothesis.

The convergence rate of the procedure is studied under the truthfulness of the error process hypothesis. An exponential decay is obtained.