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This Volume of **REVSTAT**, Volume 12 Number 3 November 2014**,** includes five articles:

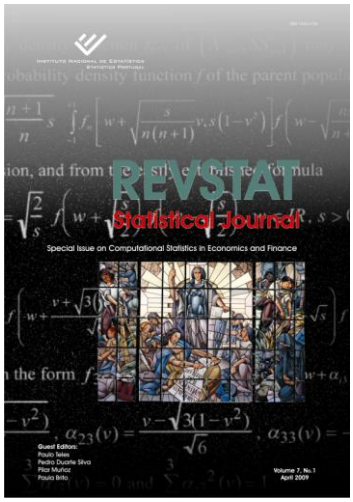
Limit Theory for Joint Generalized Order Statistics
Authors*: H.M. Barakat, E.M. Nigm* and *M.A. Abd Elgawad*

On the Impact of Falsely Assuming I.I.D. Output in the Probability of Misleading Signals
Authors*: Manuel Cabral Morais, Patrícia Ferreira Ramos, António Pacheco* and *Wolfgang Schmid.*

A Reparameterized Birnbaum–Saunders Distribution and its Moments, Estimation and Applications
Authors: *Manoel Santos-Neto, Francisco José A. Cysneiros, Víctor Leiva* and *Michelli Barros*.

The *k* Nearest Neighbors Estimation of the Conditional Hazard Function for Functional Data
Authors: *Mohammed Kadi Attouch* and *Fatima Zohra Belabed.*

Port-Estimation of a Shape Second-Order Parameter
Authors*:* Lígia *Henriques-Rodrigues, M. Ivette Gomes, M. Isabel Fraga Alves* and *Cláudia Neves.*



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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.This Volume of REVSTAT: Volume 12, No. 3 - November 2014, includes five articles. Their abstracts are presented below:

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LIMIT THEORY FOR JOINT GENERALIZED ORDER STATISTICS
Authors*: H.M. Barakat, E.M. Nigm* and *M.A. Abd Elgawad*

In Kamps [7] generalized order statistics (gos) have been introduced as a unifying theme for several models of ascendingly ordered random variables (rv's). The main aim of this paper is to study the limit joint distribution function (df) of any two statistics in a wide subclass of the gos model known as *m*-gos. This subclass contains many important practical models of gos such as ordinary order statistics (oos), order statistics with non-integer sample size, and sequential order statistics (sos). The limit df's of lower-lower extreme, upper-upper extreme, lower-upper extreme, central-central and lower-lower intermediate *m*-gos are obtained. It is revealed that the convergence of the marginals *m*-gos implies the convergence of the joint df. Moreover, the conditions, under which the asymptotic independence between the two marginals occurs, are derived..

ON THE IMPACT OF FALSELY ASSUMING I.I.D. OUTPUT IN THE PROBABILITY OF MISLEADING SIGNALS
Authors*: Manuel Cabral Morais, Patrícia Ferreira Ramos, António Pacheco* and *Wolfgang Schmid.*

Misleading signals (MS) are valid alarms which correspond to the misinterpretation of a shift in the process mean (resp. variance) as a shift in the process variance (resp. mean), when we deal with simultaneous schemes for these two parameters. MS can be fairly frequent, as reported by some authors, and occur for instance when:
— the individual chart for the mean triggers a signal before the one for the variance, even though the process mean is on-target and the variance is off-target; or
— the individual chart for the variance triggers a signal before the one for the mean, although the variance is in-control and the process mean is out-of-control.
This paper illustrates how (un)reliable are the traditional simultaneous Shewhart- and EWMA-type schemes in identifying which parameter has changed, under the false assumption of independence, namely when the output process within each sample follows AR(1), AR(2) or ARMA (1,1) models. This is done by means of Monte Carlo simulation and the estimation of the probability of a misleading signal (PMS).
Finally, we go on to compare these estimates of PMS with the values of the PMS of simultaneous Shewhart- and EWMA-type residual schemes whose control statistics take into account the autocorrelation structure of the output process.

A REPARAMETERIZED BIRNBAUM–SAUNDERS DISTRIBUTION AND ITS MOMENTS, ESTIMATION AND APPLICATIONS
Authors: *Manoel Santos-Neto, Francisco José A. Cysneiros, Víctor Leiva* and *Michelli Barros*.

The Birnbaum–Saunders (BS) distribution is a model that is receiving considerable attention due to its good properties. We provide some results on moments of a reparameterized version of the BS distribution and a generation method of random numbers from this distribution. In addition, we propose estimation and inference for the mentioned parameterization based on maximum likelihood, moment, modified moment and generalized moment methods. By means of a Monte Carlo simulation study, we evaluate the performance of the proposed estimators. We discuss applications of the reparameterized BS distribution from different scientific fields and analyze two real-world data sets to illustrate our results. The simulated and real data are analyzed by using the R software.

THE *k* NEAREST NEIGHBORS ESTIMATION OF THE CONDITIONAL HAZARD FUNCTION FOR FUNCTIONAL DATA
Authors: *Mohammed Kadi Attouch* and *Fatima Zohra Belabed.*

In this paper, we study the nonparametric estimator of the conditional hazard function using the *k* nearest neighbors (k-NN) estimation method for a scalar response variable given a random variable taking values in a semi-metric space. We give the almost complete convergence (its corresponding rate) of this estimator and we establish the asymptotic normality. Then the effectiveness of this method is exhibited by a comparison with the kernel method estimation given in Ferraty *et al.* ([12]) and Laksaci and Mechab ([15]) in both cases simulated data and real data.

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PORT-ESTIMATION OF A SHAPE SECOND-ORDER PARAMETER

Authors: Lígia *Henriques-Rodrigues, M. Ivette Gomes, M. Isabel Fraga Alves* and *Cláudia Neves.*

In this paper we study, under a semi-parametric framework and for heavy right tails, a class of location invariant estimators of a shape second-order parameter, ruling the rate of convergence of the normalised sequence of maximum values to a non-degenerate limit. This class is based on the PORT methodology, with PORT standing for peaks over random thresholds. Asymptotic normality of such estimators is achieved under a third-order condition on the right-tail of the underlying model F and for suitable large intermediate ranks. An illustration of the finite sample behaviour of the estimators is provided through a small-scale Monte-Carlo simulation study..

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