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Este Volume da REVSTAT, Volume 14, N.º 3 - junho 2016, apresenta seis artigos científicos:

PROPERTIES OF n-LAPLACE TRANSFORM RATIO ORDER AND L(n)-CLASS OF LIFE DISTRIBUTIONS
Authors*: Jalil Jarrahiferiz, GholamReza Mohtashami Borzadaran e Abdolhamid Rezaei Roknabadi*

A MIXTURE INTEGER-VALUED GARCH MODEL
Authors: *Mamadou Lamine Diop*, *Aliou Diop* e *Abdou Kâ Diongue*

MEAN-OF-ORDER-p LOCATION-INVARIANT EXTREME VALUE INDEX ESTIMATION
Authors: *M. Ivette Gomes, Lígia Henriques-Rodrigues e B.G. Manjunath.*

SEQUENTIAL ESTIMATION OF A COMMON LOCATION PARAMETER OF TWO POPULATIONS
Author: *Agnieszka Stępień-Baran*

AN RKHS FRAMEWORK FOR SPARSE FUNCTIONAL VARYING COEFFICIENT MODEL
Authors*: Behdad Mostafaiy, Mohammad Reza Faridrohani* e *S. Mohammad E. Hosseininasab*

GAMMA KERNEL ESTIMATION OF THE DENSITY DERIVATIVE ON THE POSITIVE SEMI-AXIS BY DEPENDENT DATA
Author*: L.A. Markovich*

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O presente volume **REVSTAT: Volume 14, No.3 - junho 2016** contém seis artigos, cujos resumos, originais em inglês, se apresentam de seguida:

PROPERTIES OF n-LAPLACE TRANSFORM RATIO ORDER AND L(n)-CLASS OF LIFE DISTRIBUTIONS

Authors: *Jalil Jarrahiferiz, GholamReza Mohtashami Borzadaran* e *Abdolhamid Rezaei Roknabadi*

One notion of stochastic comparisons of non-negative random variables based on ratios of n^{th} derivative of Laplace transforms (*n*-Laplace transform order or shortly $\leq_{n\text{-Lt-r}}$ order) is introduced by Mulero *et al.* (2010). In addition, they studied some of its applications in frailty models. In this paper, we have focused on some further properties of this order. In particular, we have shown that $\leq_{n\text{-Lt-r}}$ order implies dual weak likelihood ratio order ($\leq_{DWLR}$ order). Moreover, $\leq_{n\text{-Lt-r}}$ order, under certain circumstances, implies likelihood ratio order ($\leq_{lr}$ order). Finally, the $L^{(n)}$ ($\overline{L}^{(n)}$)-class of life distribution is proposed and studied. This class reduces to L ($\overline{L}$)-class if we take n=0.

A MIXTURE INTEGER-VALUED GARCH MODEL

Authors: *Mamadou Lamine Diop, Aliou Diop* e *Abdou Kâ Diongue*

In this paper, we generalize the mixture integer-valued ARCH model (MINARCH) introduced by Zhu *et al.* (2010) (F. Zhu, Q. Li, D. Wang. A mixture integer-valued ARCH model, *J. Statist. Plann. Inference*, 140 (2010), 2025–2036.) to a mixture integer-valued GARCH (MINGARCH) for modeling time series of counts. This model includes the ability to take into account the moving average (MA) components of the series. We give the necessary and sufficient conditions for first and second order stationarity solutions. The estimation is done via the EM algorithm. The model selection problem is studied by using three information criterions. We also study the performance of the method via simulations and include a real data application.

MEAN-OF-ORDER-p LOCATION-INVARIANT EXTREME VALUE INDEX ESTIMATION

Authors: *M. Ivette Gomes, Lígia Henriques-Rodrigues* e *B.G. Manjunath*

A simple generalisation of the classical Hill estimator of a positive extreme value index (EVI) has been recently introduced in the literature. Indeed, the Hill estimator can be regarded as the logarithm of the mean of order p=0 of a certain set of statistics. Instead of such a geometric mean, we can more generally consider the mean of order p (MOP) of those statistics, with p real, and even an optimal MOP (OMOP) class of EVI-estimators. These estimators are scale invariant but not location invariant. With PORT standing for peaks over random threshold, new classes of PORT-MOP and PORT-OMOP EVI-estimators are now introduced. These classes are dependent on an extra tuning parameter q, $0 \leq q < 1$, and they are both location and scale invariant, a property also played by the EVI. The asymptotic normal behaviour of those PORT classes is derived. These EVI-estimators are further studied for finite samples, through a Monte-Carlo simulation study. An adequate choice of the *tuning* parameters under play is put forward, and some concluding remarks are provided.

SEQUENTIAL ESTIMATION OF A COMMON LOCATION PARAMETER OF TWO POPULATIONS

Author: *Agnieszka Stępień-Baran*

The problem of sequentially estimating a common location parameter of two independent populations from the same distribution with an unknown location parameter and known but different scale parameters is considered in the case when the observations become available at random times. Certain classes of sequential estimation procedures are derived under a location invariant loss function and with the observation cost determined by convex functions of the stopping time and the number of observations up to that time.

AN RKHS FRAMEWORK FOR SPARSE FUNCTIONAL VARYING COEFFICIENT MODEL

Authors: *Behdad Mostafaiy, Mohammad Reza Faridrohani* e *S. Mohammad E. Hosseininasab*

We study functional varying coefficient model in which both the response and the predictor are functions of a common variable such as time. We demonstrate the estimation of the slope function for the case of sparse and noise-contaminated longitudinal data. So far, a few methods have been introduced based on varying coefficient model. To estimate the slope function, we consider a regularization method using a reproducing kernel Hilbert space framework. Despite the generality of the regularization method, the procedure is easy to implement. Our numerical results show that the introduced procedure performs well in some senses.

GAMMA KERNEL ESTIMATION OF THE DENSITY DERIVATIVE ON THE POSITIVE SEMI-AXIS BY DEPENDENT DATA

Author*: L.A. Markovich*

We estimate the derivative of a probability density function defined on $[0,\infty)$. For this purpose, we choose the class of kernel estimators with asymmetric gamma kernel functions. The use of gamma kernels is fruitful due to the fact that they are nonnegative, change their shape depending on the position on the semi-axis and possess good boundary properties for a wide class of densities. We find an optimal bandwidth of the kernel as a minimum of the mean integrated squared error by dependent data with strong mixing. This bandwidth differs from that proposed for the gamma kernel density estimation. To this end, we derive the covariance of derivatives of the density and deduce its upper bound. Finally, the obtained results are applied to the case of a first-order autoregressive process with strong mixing. The accuracy of the estimates is checked by a simulation study. The comparison of the proposed estimates based on independent and dependent data is provided.

Em 2003 o Instituto Nacional de Estatística iniciou o lançamento da revista científica **REVSTAT-STATISTICAL JOURNAL**, publicada em Inglês com periodicidade semestral, e com um prestigiado corpo editorial de índole internacional, que veio substituir a *Revista de Estatística* editada em Português de 1996 a 2002, também pelo Instituto. A partir de 2016 a **REVSTAT – Statistical Journal** passa a ter periodicidade trimestral.

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