# Resumos

| No | Autores | Titulo de Trabalho |
|---|---|---|
| CO1.1 | Gauss M. Cordeiro, Maria do C.S. Lima, Abraão D.C. Nascimento | The Gamma Lindley Distribution: Structural Properties and Applications |

***Resumo:***

*Providing new distributions is always precious for statisticians. A new two-parameter distribution called the gamma Lindley model is defined and studied. Various of its structural properties are derived, including explicit expressions for the moments, quantile and generating functions, mean deviations and probability weighted moments. We also investigate their moments. Maximum likelihood techniques are used to fit the new model and to show its potentiality. Based on three criteria, the proposed model provides a better than the Lindley and complementary exponential geometric distributions.*

| | | |
|---|---|---|
| CO1.2 | Gladys D.C. Barriga, Vicente G. Cancho, Dipak K. Dey | A new extended Generalized Gamma Model |

***Resumo:***

*In this paper we propose, a new extension of the Generalized Gamma distribution. The proposed model, called Marshall{Olkin extended Generalized Gamma distribution, arises based on the scheme introduced by Marshall & Olkin (1997). Also, we consider this new family in the analysis of lifetime data with cure fraction. Finally, utilizing maximum likelihood estimation, the proposed distribution is tted to two datasets one arising from measuring the strength of bres and the other on melanoma data.*

| | | |
|---|---|---|
| CO1.3 | Vera. L. D. Tomazellay, Jhon F.B. Gonzales and Mário de Castroz | A flexible Bayesian partition modelling for long-term survival data |

***Resumo:***

*In this paper we propose a Bayesian partition modeling for lifetime data in presence of a cure fraction by considering a local structure generated by a tessellation which depends on covariates. In this modeling we including information of nominal qualitative variables with more than two categories or ordinal qualitative variables. The proposed modeling is based on a promotion time cure model structure but assuming that the number of competing causes follow a power series distribution. It is an alternative modeling strategy to the conventional survival regression modeling generally used for modeling lifetime data in presence of a cure fraction, which models the cure fraction through a (generalized) linear model of the covariates. An advantage of our approach is its ability to capture the effects of covariates in a local structure. The flexibility of having a local structure is crucial to capture local effects and features of the data. The modelling is illustrated on two real melanoma data sets.*

| CO2.1 | Jacek Leskow | Resampling methods for point processes. Applications to survival analysis |
|---|---|---|

**Resumo:**

*In this paper, we present available resampling methods that are applicable to inference problems for point processes. The focus of this work is the nonparametric estimation of the hazard rate function in the multiplicative intensity model. We present first the sieve method in nonparametric estimation of the hazard rate function. Then we show the asymptotic normality theorem available under mild asymptotic independence assumptions. Finally, we show applicability of resampling methods for the confidence interval building and testing hypotheses. The theoretical results are accompanied with real life examples.*

| CO2.2 | Jayme Pinto and Nikolai Kolev | A new notion of bivariate lack-of-memory property |
|---|---|---|

**Resumo:**

*The main purpose of this note is to define a class of bivariate non-negative continuous distributions such that the sum of the components of hazard gradient vector is a linear function of both arguments. This class has as particular cases many classical ones. Restrictions for the marginals, geometric interpretations, generalizations and multivariate extension will be presented.*

| CO2.3 | Fidel Ernesto Castro Morales, Lorena Vicini, Luiz K. Hotta, Jorge A. Achcar | Modelo Geoestatístico com Processos de Poisson Não Homogêneo |
|---|---|---|

**Resumo:**

*Neste artigo propomos a utilização de modelo de Poisson não homogêneo para modelar dados de contagem em uma região de interesse. A idéia principal é incluir na função de intensidade uma componente aleatória que incorpore a dependência espacial, de forma semelhante aos modelos de fragilidade espacial usados em análise de sobrevivência. A estimação do modelo proposto é feita sob o paradigma Bayesiano. Para ilustrar o modelo proposto foi realizado um estudo com dados artificiais para testar a eficácia do método de Monte Carlo em cadeias de Markov (MCMC) na simulação de amostras da distribuição a posteriori dos parâmetros. Como uma conclusão preliminar do estudo foi observado que o algoritmo MCMC usado para simular amostras da distribuição a posteriori dos parâmetros do modelo atingiu de forma satisfatória convergência e a estimação Bayesiana dos parâmetros do modelo levou a resultados bem precisos.*

| CO3.1 | Maria Luíza G. de Toledo, Marta A. Freitas, Enrico A. Colosimo, and Gustavo L. Gilardoni | Política Ótima de Manutenção Periódica sob o Modelo ARA com Diferentes Memórias: Um Estudo de Caso na Indústria |
|---|---|---|

**Resumo:**

*An appropriate maintenance policy is essential to reduce expenses and risks related to equipment failures. This paper presents preliminary results of a study that aims to define the optimal periodic maintenance policy under the assumption of imperfect repair, using ARA (Arithmetic Reduction of Age) model proposed by Doyen and Gaudoin (2004). In particular, for a database of failures in small trucks from a mining company, maximum likelihood estimates are obtained for the parameters of ARA models with different memories, associated with a Power Law Process. Subsequently, a method for determining the optimal maintenance frequency is applied to the data, which proposes a procedure to approximate the mean function, that in this case has no closed form solution. The results provide information for the mining company, which can be used to support decision making regarding preventive maintenance policy.*

| | | |
|---|---|---|
| CO3.2 | Alice L. Morais and Silvia L. P. Ferrari | A class of regression models for parallel and series systems with a random number of components |


***Resumo:***

*In this paper we extend the Weibull power series (WPS) class of distributions and named this new class as extended Weibull power series (EWPS) class of distributions.The EWPS distributions are related to series and parallel systems with a random number of components, whereas the WPS distributions (Morais and Barreto-Souza, 2011) are related to series systems only. Unlike the WPS distributions, for which the Weibull is a limiting special case, the Weibull law is a particular case of the EWPS distributions. We prove that the distributions in this class are identiable under a simple assumption. We also prove stochastic and hazard rate order results and highlight that the shapes of the EWPS distributions are markedly more exible than the shapes of the WPS distributions.*
*We dene a regression model for the EWPS response random variable to model a scale parameter and its quantiles. We present the maximum likelihood estimator and prove its consistency and normal asymptotic distribution. Although the construction of this class was motivated by series and parallel systems, the EWPS distributions are suitable for modeling a wide range of positive data sets. To illustrate potential uses of this model, weapply it to a real data set on the tensile strength of coconut bers and present a simple device for diagnostic purposes.*


| | | |
|---|---|---|
| CO3.3 | Jocelânio W. de Oliveira, Dione Maria Valenca, Pledson G. de Medeiros, | Graficos Cusum Ajustados ao risco para monitoramento de tempos de sobrevivência com fração de cura |


***Resumo:***

*Este trabalho estuda o uso de técnicas de Controle Estatístico de Processos (CEP) para monitoramento de tempos de sobrevivência. Diferentemente de aplicações na área industrial, em que a população em estudo é considerada homogênea, o CEP na área de saúde admite a heterogeneidade e deseja levar em consideração características particulares de pacientes que, antes de se submeterem a um procedimento médico, podem apresentar diferentes riscos de morte.*
*Nessa perspectiva, alguns autores propõem o uso de um gráfico de controle CUSUM ajustado ao risco (RAST CUSUM), para monitorar resultados clínicos em que a resposta é o tempo até a ocorrência de um evento e está sujeita a censura a direita. Nesta abordagem as diferenças entre as observações são consideradas por meio de um modelo de regressão de tempo de falha acelerado (MTFA). Neste estudo simulamos um caso em que há duas características associadas aos indivíduos em estudo (covariáveis), a saber, idade e sexo, as quais influenciam na resposta, para observar o comportamento deste gráfico de controle na detecção de diferentes desvios dequalidade. Além disso, buscamos estender esta técnica para modelos de sobrevivência com fracão de cura, admitindo as ditribuições log-logística e Weibull como exemplos, e considerando omodelo de tempo de promoção. Como resultado, vemos que esta proposta de monitoramento é competente, e o uso do RAST CUSUM com MTFA em dados com fração de cura é ineficiente, o que evidencia a necessidade de adequar o método para modelos com fracão de cura.*