

Preface of the Symposium “Computational Statistical Methods”

Frederico Caeiro

Faculdade de Ciências e Tecnologia & CMA – Universidade Nova de Lisboa, 2829-516 Caparica, Portugal

This is an electronic reprint of the original article: Caeiro, F. (2014). Preface of the “Symposium on computational statistical methods”. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), AIP Conf. Proc. 1618 (ICCMSE 2014), 521-522. doi: 10.1063/1.4897789
This reprint differs from the original in typographic details.

In the last decades, computers power has increased exponentially and that power has allowed the arisen of new and more complex computational statistical models and methods. In this symposium, we bring together researchers working or applying computational statistical. All the submitted papers in the symposium have been peer reviewed and selected on the basis of the originality, significance and clarity.

In our symposium (by presenter order), Miguel Felgueiras [2] investigate Gaussian mixtures with independent components and introduce a shifted and scaled t-Student distribution as an approximation for the distribution of Gaussian mixtures. Filipe J. Marques [6] study the distribution of the linear combination of independent Gamma random variables. Ayana Mateus [8] presents an R package implementation of several nonparametric randomness tests. Fernanda Figueiredo [3] makes a comparison of sampling plans by variables using the bootstrap and Monte Carlo simulations. Luís M. Grilo [4] apply the bootstrap methodology to construct control charts, before and after a Box-Cox transformation, and compare their robustness and performance. João P. Martins [7] analyze the performance of a maximum likelihood computational algorithm for the prevalence rate estimation. Dora Prata Gomes [9] explores the statistical software R for modeling spatial extreme precipitation data. Finally, Frederico Caeiro [1] employ the Monte Carlo methodology to compare the finite sample behavior of two reduced bias estimators of the extreme value index.

Frederico Caeiro is an Auxiliary Professor at the Mathematics Department of the Faculty of Science and Technology – Nova University of Lisbon and a member of the Mathematics and Application Research Center (Portugal). He has an MSc degree in Probability and Statistics (2001) and a PhD degree in Statistics (2006) from Faculty of Science – Lisbon University. His current research interests include Statistics of Extremes, Extreme Value Theory, Nonparametric Statistics and Computational Statistics Methods. He his author or co-author of more than 40 scientific publications in international peer review journals, book chapters and conference proceedings. Recently, he was one of the editors of the book *Advances in Regression, Survival Analysis, Extreme Values, Markov Processes and Other Statistical Applications* [5], published by Springer.

ACKNOWLEDGMENTS

Research partially supported by National Funds through FCT - Fundação para a Ciência e a Tecnologia, project PEst-OE/MAT/UI0297/2014 (CMA/UNL).

REFERENCES

1. F. Caeiro and M. I. Gomes (2014). Comparison of Asymptotically Unbiased Extreme Value Index estimators: a Monte Carlo Simulation Study. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 551-554.
2. M. Felgueiras, R. Santos and J. P. Martins (2014). Some Results on Gaussian Mixtures. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 523-526.
3. F. Figueiredo, A. Figueiredo and M. I. Gomes (2014). Comparison of sampling plans by variables using the bootstrap and Monte Carlo simulations. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 535-538.
4. L. M. Grilo, D. M. R. Mateus, A. C. Alves and H. L. Grilo (2014). Robust control charts in industrial production of olive oil. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 539-542.
5. J. Lita da Silva, F. Caeiro, I. Natário, and C.A. Braumann (2013). *Advances in Regression, Survival Analysis, Extreme Values, Markov Processes and Other Statistical Applications*, Springer Berlin Heidelberg.
6. F. J. Marques and C. A. Coelho (2014). A note on the distribution of the linear combination of independent Gamma random variables. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 527-530.
7. J. P. Martins, M. Felgueiras and R. Santos (2014). Maximum Likelihood Estimation in Pooled Sample Tests. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 543-546.
8. A. Mateus and F. Caeiro (2014). An R implementation of several Randomness Tests. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 531-534.
9. D. Prata Gomes and M. Neves (2014). Exploring R for modeling spatial extreme precipitation data. In T. E. Simos, Z. Kalogiratou and T. Monovasilis (eds.), *AIP Conf. Proc.* **1618**, 547-550.