Preface of the "5th Symposium on Distribution Theory, Estimation and Inference"

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Preface of the "5th Symposium on Distribution Theory, Estimation and Inference"

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This Symposium aimed to deal with a broad range of theoretical and applied questions occurring in statistical practice and concerning Distribution Theory, Estimation, and Inference, which may be considered as the three main cornerstones or building blocks of statistics. Indeed they are ubiquitous in any research in statistics, either theoretical or applied.

The Symposium covered topics on Univariate and Multivariate Analysis, Econometrics, Risk Analysis, which are key areas where works on the study of the exact, asymptotic or near-exact distributions of the associated test statistics and parameter estimators, as well as all aspects related with statistical modeling, are fields of major importance. Furthermore, based on the concepts of contour sets and generating functions, far reaching generalizations of the family of elliptically contoured distributions were discussed. Statistically well motivated, the geometric disintegration method was further developed.

Carlos A. Coelho – Filipe J. Marques – Wolf-Dieter Richter



Carlos A. Coelho is Associate Professor, with Habilitation, at the Mathematics Department of Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa. Carlos A. Coelho has a Ph.D. in Biostatistics by the University of Michigan and is an Elected Member of the International Statistical Institute.

Filipe J. Marques is Assistant Professor at the Mathematics Department of Faculdade de Ciências e Tecnologia of Universidade Nova de Lisboa. Filipe J. Marques holds a Ph.D. in Mathematics with a specialization in Statistics by Universidade Nova de Lisboa.

Their main areas of research are Mathematical Statistics and Distribution Theory, namely exact and near-exact distributions for likelihood ratio test statistics used in Multivariate Analysis, with Estimation, Multivariate Models and Computational Statistics as other areas of interest. They have as main research interest the development of near-exact distributions, which are asymptotic distributions built using a different concept in approximating distributions and which have been successfully applied to a large number of statistics. These distributions are much useful in situations where it is not possible to obtain the exact distribution in a manageable form and where the common asymptotic distributions do not display the necessary precision.

Wolf-Dieter Richter is a Professor at the Institute of Mathematics at the University of Rostock. His main areas of research are Mathematical Statistics and Exact and Asymptotic Distribution Theory, namely generalized central and

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non-central Chisquare-, Student- and Fisher- distributions, non-linear regression, exact and asymptotic distributions of likelihood-ratio classification rules, quantile approximation, simulation, skewness-kurtosis adjusted decisions, geometric and stochastic representations of star-shaped (especially convex and radially concave contoured), skewed and directional distributions, exact statistical distributions under non-standard assumptions, and limit theorems in multivariate large deviation theory. He has a Ph.D. and a Habilitation in Mathematics at the Technical University of Dresden, was granted with a Special Grant of the Alexander von Humboldt-Stiftung at the University of Marburg, is the supervisor of eight Ph. D. students, and is an ISI Elected Member. In his work, he and his numerous co-workers developed and combined analytical and geometric methods for analyzing distributions, introduced antinorms and semi-antinorms, introduced new trigonometric functions and coordinates for making his new geometric disintegration method an efficient tool of mathematical work, established non-Euclidean uniform distributions on generalized spheres, and the ball number function whose values are normalizing constants of generating functions of multivariate densities.