FOREWORD

Recent years have witnessed a vigorous growth in the use of Extreme Value Theory and Statistics of Extremes, with relevance to applications in a broad spectrum of areas, ranging for example from natural hazards in geophysics and the environment to rare events in financial risk. This special issue of *REVSTAT – Statistical Review* aims at giving the readers a flavor of this exciting area of research, through recent advances in the field.

Statistics of Extremes and Related Fields consists of six articles authored by prominent researchers who participated in the 56th Session of the International Statistical Institute, which was held in PORTUGAL, Lisbon, from August 22–29, 2007. The selection involves some of the original contributions in Invited Paper Meetings (IPMs) and Special Topics Contributed Paper Meetings (STCPMs) in the field of Statistics of Extremes, namely IPM7 (*Bias Reduction in the Estimation of Parameters of Rare Events*), IPM10 (*Extremes, Risk and the Environment*), IPM61 (*Are extreme weather events more prevalent now than before?*) and STCPM17 (*Extremal methods for action in today's world*). This selection covers a wide range of topics in the field, which are of significant current interest.

The topics discussed include:

Minimum-Variance Reduced-Bias High Quantile Estimation, i.e., estimation of a value that is exceeded with a small pre-specified probability. The semiparametric estimation of this parameter relies essentially on the estimation of the tail index, the primary parameter in statistics of extremes.

An applied article whose main objective is to provide an insight into the geographic distribution of extreme precipitation events in the Southern region of continental Portugal, as a basis for future study of the relationships between extreme rainfall patterns.

The asymptotic properties of the so-called Generalized Probability-Weighted Moments (GPWM), a recent extension of PWM, which address Generalized Extreme Value distributions with large values of the shape parameter.

The problem in a general kernel goodness-of-fit test statistic for assessing whether a sample is consistent with the Pareto-type model. Therein the relation between goodness-of-fit testing and the optimal selection of the sample fraction for tail estimation is examined.

A proposal for use of a stationary max-stable process as a model of the dependence structure in two-dimensional spatial problems, employing a representation of simple max-stable processes.

A brief overview of several tests published in the context of statistical choice of extreme value domains and for assessing extreme value conditions, also illustrated with a teletraffic data set.

It is our hope that this edition also strengthens the ties and encourages collaboration between researchers in Statistics of Extremes and related fields all over the world. We thank the authors for their prompt support with their interesting contributions. We are also most grateful to the referees for careful review of the papers. Finally, we must record our deep appreciation for the encouragement and support of the editor-in-chief, Professor Ivette Gomes, (together with CEAUL, Center of Statistics and Applications at University of Lisbon, `http://www.ceaul.fc.ul.pt`), who had a prominent role on the organization of the IPMs and STCPMs under the auspices of ISI2007.

Finally our sincere thanks go to all those involved in making this project successful.

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