

Preface

This volume of papers grew out of the

International Conference on
Robust Rank-Based and Nonparametric Methods

which was held at Western Michigan University, Kalamazoo, MI, on April 9 and 10, 2015. This conference consisted of 2 days of talks by distinguished researchers in the areas of robust, rank-based, and nonparametric statistical methods. Many of the speakers agreed to submit papers to this volume in areas of their expertise. These papers were refereed by external reviewers, and revised papers were resubmitted for a final review. We thank the referees for their work on these papers.

This collection of papers discuss robust rank-based and nonparametric procedures for many of the current models of interest for univariate and multivariate situations. It begins with a review of rank-based methods for linear and nonlinear models. Many of the succeeding papers extend robust and nonparametric methods to mixed and GEE-type models. Many of the papers develop robust and nonparametric methods for multivariate designs and time series models. Theoretical properties of the analyses, including asymptotic theory and efficiency properties, are developed. Results of simulation studies confirming the validity and empirical efficiency of the methods are presented. Discussion also focuses on applications involving real data sets and computational aspects of these robust procedures. Several R packages for these procedures are discussed, and the URLs for their downloading are cited.

The conference was hosted by the Department of Statistics of Western Michigan University. Our thanks goes to many people who contributed to the success of this conference. In particular, a special thanks goes to Ms. Michelle Hastings, administrative assistant of the Department of Statistics, who was in charge of the local arrangements. Also a special thanks to Dr. Magdalena Niewiadomska-Bugaj, chair of the Department of Statistics; Professor Rajib Paul, Department of Statistics; and Dr. Thomas Vidmar, Biostat Consultants of Portage, for their time spent in organizing this conference. Also, our thanks to Professor Simon Sheather, Texas A&M University, for emceeding the conference banquet.

We deeply appreciate the efforts of the editorial staff of Springer who made the production of this book possible. A special thanks to Ms. Hannah Bracken, associate editor of Statistics at Springer, for her interest and initial guidance on the book, and to Mr. Dhayanidhi Karunanidhi, production coordinator at Springer, for his efforts in the actual production of the book. We acknowledge the help of Dr. Jeff Terpstra on some \LaTeX issues. Last but not least, a special thanks to the authors for creating this collection of interesting papers in robust and nonparametric methods.

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