

# Preface

Extreme values are extremely interesting. The maximum or minimum of large number observations when normalized can only converge to three types of extreme value distributions, Gumbel, Frechet and Weibull. Thus the maximum and minimum order statistics of  $n$  observations when normalized converges to the extreme value distributions as  $n$  tends to infinity. The local maximum or minimum (records) of a sequence of independent and identically distributed random variables are useful to estimate the parameters of the extreme value distributions. In Chap. 1 of this book some distributional properties of the largest and smallest order statistics from some important distributions are presented. In Chap. 2 some basic properties of record values and inferences based on the distributional properties are given. In Chap. 3 the necessary and sufficient conditions of maximum and minimum order statistics to converge to the extreme value distributions are derived. In Chap. 3 also the normalizing constants of several well-known distributions are derived. In Chap. 4 estimations of parameters of the extreme value distributions are derived. An extensive reference of papers related to ordered random variables is given. This book can be used as a textbook or as a consulting book.

In this book there may be some errors escaped our attention. However, I will be glad to receive any comments from the readers about it. I am grateful to the Atlantis press for publishing this book.

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