Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste)

Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz

Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste)

Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz

Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz

This title is written for the numerate nonspecialist, and hopes to serve three purposes. First it gathers mathematical material from diverse but related fields of order statistics, records, extreme value theory, majorization, regular variation and subexponentiality. All of these are relevant for understanding fat tails, but they are not, to our knowledge, brought together in a single source for the target readership. Proofs that give insight are included, but for most fussy calculations the reader is referred to the excellent sources referenced in the text. Multivariate extremes are not treated. This allows us to present material spread over hundreds of pages in specialist texts in twenty pages. Chapter 5 develops new material on heavy tail diagnostics and gives more mathematical detail. Since variances and covariances may not exist for heavy tailed joint distributions, Chapter 6 reviews dependence concepts for certain classes of heavy tailed joint distributions, with a view to regressing heavy tailed variables.

Second, it presents a new measure of obesity. The most popular definitions in terms of regular variation and subexponentiality invoke putative properties that hold at infinity, and this complicates any empirical estimate. Each definition captures some but not all of the intuitions associated with tail heaviness. Chapter 5 studies two candidate indices of tail heaviness based on the tendency of the mean excess plot to collapse as data are aggregated. The probability that the largest value is more than twice the second largest has intuitive appeal but its estimator has very poor accuracy. The Obesity index is defined for a positive random variable X as:

$Ob(X) = P(X_1 + X_4 > X_2 + X_3 | X_1 \leq X_2 \leq X_3 \leq X_4)$, X_i independent copies of X.

For empirical distributions, obesity is defined by bootstrapping. This index reasonably captures intuitions of tail heaviness. Among its properties, if $\alpha > 1$ then $Ob(X) < Ob(X\alpha)$. However, it does not completely mimic the tail index of regularly varying distributions, or the extreme value index. A Weibull distribution with shape 1/4 is more obese than a Pareto distribution with tail index 1, even though this Pareto has infinite mean and the Weibull's moments are all finite. Chapter 5 explores properties of the Obesity index.

Third and most important, we hope to convince the reader that fat tail phenomena pose real problems; they are really out there and they seriously challenge our usual ways of thinking about historical averages, outliers, trends, regression coefficients and confidence bounds among many other things. Data on flood insurance claims, crop loss claims, hospital discharge bills, precipitation and damages and fatalities from natural catastrophes drive this point home. While most fat tailed distributions are "bad", research in fat tails is one distribution whose tail will hopefully get fatter.

Download and Read Free Online Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz

---

From reader reviews:

Jay Burke:

Reading a reserve can be one of a lot of task that everyone in the world likes. Do you like reading book and so. There are a lot of reasons why people love it. First reading a reserve will give you a lot of new details. When you read a guide you will get new information because book is one of many ways to share the information or perhaps their idea. Second, reading a book will make you actually more imaginative. When you reading a book especially hype book the author will bring one to imagine the story how the personas do it anything. Third, you could share your knowledge to others. When you read this Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste), you may tells your family, friends as well as soon about yours reserve. Your knowledge can inspire the mediocre, make them reading a guide.

Cheryl Burnett:

Reading a book to become new life style in this 12 months; every people loves to learn a book. When you go through a book you can get a great deal of benefit. When you read publications, you can improve your knowledge, due to the fact book has a lot of information on it. The information that you will get depend on what kinds of book that you have read. If you would like get information about your review, you can read education books, but if you act like you want to entertain yourself look for a fiction books, this kind of us novel, comics, as well as soon. The Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) offer you a new experience in looking at a book.

Carol Ton:

Is it you actually who having spare time in that case spend it whole day through watching television programs or just lying on the bed? Do you need something totally new? This Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) can be the response, oh how comes? The new book you know. You are thus out of date, spending your spare time by reading in this new era is common not a geek activity. So what these publications have than the others?

Henry Jones:

That publication can make you to feel relax. This specific book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) was colourful and of course has pictures on the website. As we know that book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) has many kinds or category. Start from kids until teenagers. For example Naruto or Private eye Conan you can read and feel that you are the character on there. So , not at all of book are usually make you bored, any it offers up you feel happy, fun and loosen up. Try to choose the best book in your case and try to like reading which.

Download and Read Online Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz #4KMJS1B8QXP

Read Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) by Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz for online ebook

Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) by Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) by Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz books to read online.

Online Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) by Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz ebook PDF download

Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) by Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz Doc

Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) by Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz Mobipocket

Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) by Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz EPub