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:

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

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:

Karen Keegan:

Why don't make it to be your habit? Right now, try to ready your time to do the important action, like looking for your favorite book and reading a publication. Beside you can solve your long lasting problem; you can add your knowledge by the book entitled Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste). Try to make the book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) as your good friend. It means that it can to get your friend when you sense alone and beside those of course make you smarter than ever. Yeah, it is very fortuned in your case. The book makes you a lot more confidence because you can know almost everything by the book. So , we should make new experience along with knowledge with this book.

Cary Barrett:

The book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) make one feel enjoy for your spare time. You can utilize to make your capable more increase. Book can to be your best friend when you getting pressure or having big problem using your subject. If you can make examining a book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) for being your habit, you can get considerably more advantages, like add your current capable, increase your knowledge about a few or all subjects. It is possible to know everything if you like wide open and read a e-book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste). Kinds of book are a lot of. It means that, science publication or encyclopedia or other people. So , how do you think about this reserve?

Sandra Maes:

Book is to be different for each and every grade. Book for children until adult are different content. As we know that book is very important normally. The book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) has been making you to know about other information and of course you can take more information. It doesn't matter what advantages for you. The e-book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) is not only giving you far more new information but also being your friend when you really feel bored. You can spend your spend time to read your publication. Try to make relationship with the book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste). You never experience lose out for everything if you read some books.

Ann McLemore:

The particular book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) will bring that you the new experience of reading some sort of book. The author style to clarify the idea is very unique. When you try to find new book to study, this book very suitable to you. The book Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) is much recommended to you to see. You can also get the e-book through the official web site, so you can quicker to read the book.

Download and Read Online Fat-Tailed Distributions: Data, Diagnostics and Dependence (Iste) Roger M. Cooke, Daan Nieboer, Jolanta Misiewicz #GRPQ42J53FT

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