



## Statistical Intervals: A Guide for Practitioners and Researchers, 2nd Edition

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E-Book	ISBN: 978-1-118-59516-9	August 2017	<b>\$91.99</b>
Hardcover	ISBN: 978-0-471-68717-7	April 2017	<b>\$114.50</b>
O-Book	ISBN: 978-1-118-59484-1	April 2017	<b>Available on Wiley Online Library</b>

### DESCRIPTION

**Describes statistical intervals to quantify sampling uncertainty, focusing on key application needs and recently developed methodology in an easy-to-apply format**

Statistical intervals provide invaluable tools for quantifying sampling uncertainty. The widely hailed first edition, published in 1991, described the use and construction of the most important statistical intervals. Particular emphasis was given to intervals—such as prediction intervals, tolerance intervals and confidence intervals on distribution quantiles—frequently needed in practice, but often neglected in introductory courses.

Vastly improved computer capabilities over the past 25 years have resulted in an explosion of the tools readily available to analysts. This second edition—more than double the size of the first—adds these new methods in an easy-to-apply format. In addition to extensive updating of the original chapters, the second edition includes new chapters on:

- Likelihood-based statistical intervals
- Nonparametric bootstrap intervals
- Parametric bootstrap and other simulation-based intervals
- An introduction to Bayesian intervals
- Bayesian intervals for the popular binomial, Poisson and normal distributions

- Statistical intervals for Bayesian hierarchical models
- Advanced case studies, further illustrating the use of the newly described methods

New technical appendices provide justification of the methods and pathways to extensions and further applications. A webpage directs readers to current readily accessible computer software and other useful information.

*Statistical Intervals: A Guide for Practitioners and Researchers, Second Edition* is an up-to-date working guide and reference for all who analyze data, allowing them to quantify the uncertainty in their results using statistical intervals.

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## ABOUT THE AUTHOR

**William Q. Meeker** is Professor of Statistics and Distinguished Professor of Liberal Arts and Sciences at Iowa State University. He is co-author of *Statistical Methods for Reliability Data* (Wiley, 1998) and of numerous publications in the engineering and statistical literature and has won many awards for his research.

**Gerald J. Hahn** served for 46 years as applied statistician and manager of an 18-person statistics group supporting General Electric and has co-authored four books. His accomplishments have been recognized by GE's prestigious Coolidge Fellowship and 19 professional society awards.

**Luis A. Escobar** is Professor of Statistics at Louisiana State University. He is co-author of *Statistical Methods for Reliability Data* (Wiley, 1998) and several book chapters. His publications have appeared in the engineering and statistical literature and he has won several research and teaching awards.

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