

Preface

The importance of the analysis and the presentation of experimental data cannot be overstated. Good experimental results may be rendered useless by failing to keep to certain rules in their presentation, either to an audience or in written form. It is our intention to present in this book these methods at an introductory university level. Those working in the experimental sciences, but also anyone involved in the analysis of numerical data, may find the book useful.

The book is intended to be used as a textbook and this has determined its characteristics: The theoretical proofs are given in considerable detail, many figures are used, as well as a large number of examples and problems to be solved by the reader. The vast majority of the examples are solved using four software packages: Excel[®], Origin[®], Python and R. Most of the problems may also be solved using these programs. Excel[®] is used due to its wide availability as a program for data analysis, Origin[®] because it is an excellent program for creating graphical presentations of data. Python and R are used because they are free, open-source programming languages, widely used in data science. Reference to these programs is made using the symbols [E], [O], [P] and [R], respectively. The same symbols also indicate that a certain problem may be solved using the corresponding program.

The book may be used as a textbook for an introductory course on Data Analysis and Presentation. It is hoped that it will provide a useful addition to the existing literature.

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With Examples, Problems and Programs

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