Chapter 3
Implementation in R

By now, several thousands of packages, compilations of special functions and extensions, can be downloaded from the official Internet platforms for R. Some packages offer more than a thousand functions. Some functions, such as the `par()` function so important for our topic, can receive more than 80 arguments. At the beginning, a system like this appears as hard to negotiate as a jungle or a maze.

In this book, we will use a very specific selection of those that have shown to be necessary or helpful for the creation of the examples. It is obvious that we cannot give a complete introduction to R; these days, there are a multitude of good books and websites available to do just that.

3.1 Installation

For Windows, Mac OS X, and Linux, R can be downloaded from the project’s website as a pre-compiled installation package. As per standard, R comes with a series of packages; further packages can be installed within R—either via a function or via a menu—as needed. The graphic user platform RStudio is well suited for day-to-day working with R; it is also freely available and provides an identical work environment for Windows, Mac OS X, and Linux (Fig. 3.1).
3.2 Basic Concepts in R

R is an interpreter. This means that every input is processed directly and row by row. If you enter anything in the command prompt, the entry is executed upon completion of the line (on pressing the Enter key). If you enter \( 3 + 1 \), the result 4 will be immediately displayed. Additionally, you will be informed that this 4 is an element of an object at position 1.

\[
> 3+1 \\
[1] 4 \\
>
\]

Using the command row, you can also gain access to R’s outstanding help. Using the command `help()` will give you extensive explanations on any function; for example

\[
> \text{help(plot)}
\]

opens a new window with the help text (see Fig. 3.2).