

# Introduction into R

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R is the most popular programming language for statistical analysis and data visualization. In this practical course you will learn the basic concepts of R. The target audience are IMPRS students and postdocs. We will include the following topics:

- Structures: Data and Functions
- Descriptive Statistics: deriving basic information from data
- Visualization: customizing simple plots, and high-dimensional data representation
- I/O: getting data into and out of R
- Data munging: preparing and shaping data for analysis
- Automation: writing simple scripts for repeated use
- Packages: using community power for difficult task

## Goal:

After the course you will be able to use R for simple statistical analysis, repetitive computations, and the generation of publication-ready images. More importantly, you will also be able to identify and use thousands of public software packages that can help you with more challenging tasks and domain-specific analyses

## Requirements:

This is a hands-on course and requires a WLAN-capable laptop (**non-Windows!**) with:

1. **Basic Internet Access.** Two alternative options:
  - a) Register your laptop with core-IT (only for MPI-IE members)
  - b) Obtain access credentials at the reception (for the duration of the course)
2. **Software Access (R/Rstudio).** Two alternative options:
  - a) Install R **and** RStudio before the course  
<https://cran.rstudio.com/>  
<https://www.rstudio.com/products/rstudio-desktop/>
  - b) obtain a user account with access to MPI-IE Rstudio server (MPI-IE users only)  
<https://rstudio.ie-freiburg.mpg.de>  
(intranet access requires your laptop to be registered with the core-IT)

## 3. Know your keyboard!

Special characters will be needed throughout the course, e.g.

\$, |, [, ], {, }, >, <, #, ~, &, ^, %, !, ?

**Course language:** English

**Maximal Number of Participants:** 15