

From the field to the desk

All what you need to know about floristic data
before doing statistics

IAVS – Latin America and the Caribbean Section

Trainers

Miguel Alvarez
Marius Bottin
João Pedro Costa Elias

Description

A big challenge for vegetation scientists is dealing with data sets organized in multiple tables. Furthermore the taxonomic hierarchies and nomenclature resolution for recorded organisms is not considered in most of the statistical applications.

In this online workshop we will learn alternative ways to store vegetation data sets and their import into the software R for further data handling and assessment. We will also discuss about suitable strategies to equalize taxonomic nomenclature comparing with suitable data bases. We will introduce to the use of the package [vegtable](#) to structure such data in R, to pre-process it and do some descriptive statistics and exploratory assessments.

Participants and Requirements

This workshop targets students and scholars assessing data collected in own vegetation surveys or data compiled in vegetation-plot databases and collected from different sources. Potential candidates require following skills:

- Experience with regression models in R (e.g. linear regression). In exchange, experience doing ANOVA may also fulfill this requirement.
- Experience doing plots in R. This can be either using common plot functions or trellis plots (e.g. `ggplot`).
- Knowledge about different classes of data in R (e.g. numeric, integer, factor, etc.) and object structures (e.g. vectors, matrices, data frames, lists, etc.).
- Basic knowledge on multivariate statistics (not necessarily in R).

The workshop is restricted to a maximum of 30 participants and will have a cost of 30.- € for members of IAVS and 70.- € for non-members.

Intended schedule

The workshop will be organized in 5 sessions, each of 3 teaching hours (45 minutes) plus a 15 minutes break. In total each session lasts 2.5 chronological hours.

Session 1 (21-04-2023)

- Introduction to the course
- Refreshing R
- Introduction to Rmarkdown
- Taxonomic Resolution

Session 2 (28-04-2023)

- Taxonomic Lists in `taxlist`
- Data Formats

Session 3 (05-05-2023)

- Introduction to `vegtable`
- Assessing taxonomic information
- Assessing environmental information

Session 4 (12-05-2023)

- Deepen Rmarkdown
- Aggregating Plots
- Data Exploration

Session 5 (19-05-2023)

- Hypothesis Test
- Multivariate Statistics
- Closure