

Introduction to R

Siparcs/HPC workshops

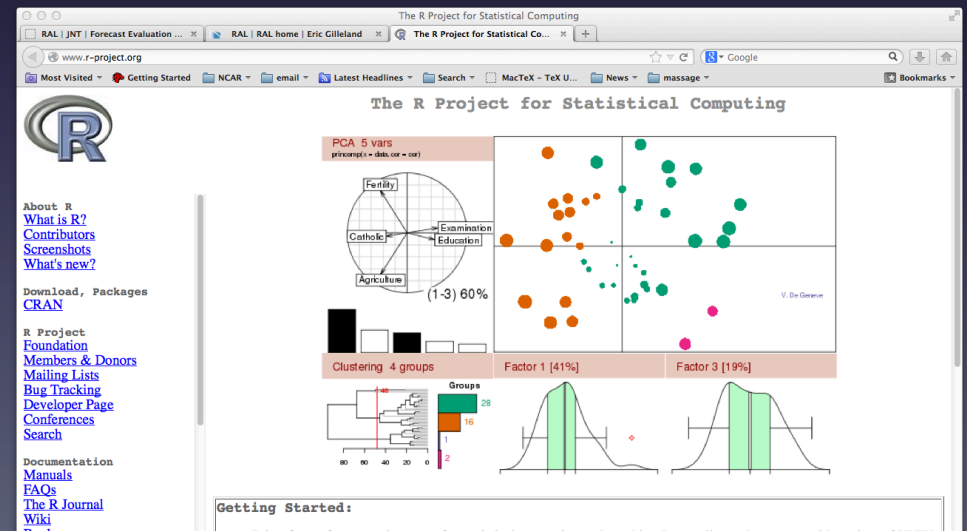
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R-Project website

- Documentation
- Access to packages via CRAN
- Search engines (including one specific to R)
- other
- <http://www.R-project.org>



Advanced

- Reading and Writing NetCDF files

<http://www.image.ucar.edu/Software/Netcdf/>

- A climate related precipitation example

<http://www.image.ucar.edu/~nychka/>

[FronrangePrecip/](#)

.RData

- All work conducted within a “dot” file called .RData, which is referred to as the workspace and exists in the working directory
- `save.image()`
- `getwd()`
- `?setwd`
- `citation()`
- `q()`
- Functions exist to export results outside of the workspace

Object Oriented

- plot
- methods(plot)
- methods(class="lm")
- print
- summary
- predict
- length

Logical Operators

- `&`, `&&` (and)
- `|`, `||` (or)
- `==`
- `>=`, `>`, `<`, `<=`
- `is.na`, `is.finite`, `is.numeric`, `is.logical`, `is.element`

Operators

- +
- -
- *
- /
- ^, **,
/
- %*%/%
- <-, ->, =, ?assign

Functions

- `help, ?`
- `args(plot)`
- `plot`
- `Sys.time`
- `Sys.time()`
- `x <- Sys.time()`
 - `x` is the result of the `Sys.time` call
- `y <- Sys.time`
 - `y` is a copy of the function `Sys.time`

Packages

- Thousands of users have written packages. Most are freely available in the same place, and accessible (installation) from within an R session (provided you are connected to the internet).
- Must first install the package you want (need only do once), and load the library for each new R session.
- `?install.packages`
- `?update.packages`
- `?library`
- `citation("pkgname")`

Some Atmospheric Science Oriented Packages

- fields, spatstat, sp (spatial statistics)
- maps
- extRemes
- SpatialExtremes
- verification
- RadioSonde
- ncdf, netCDF

Scripts and Data for Today

On Yellowstone

/glade/p/CSG/training/R-May20-2013

OR

[ftp.rap.ucar.edu:/incoming/irap/ericg](ftp://rap.ucar.edu/incoming/irap/ericg)

BuffaloRiverLobelvilleTN.csv BuffaloRiverLobelvilleTN.dat

scripts.R