

The plantspec R package: a tool for spectral analysis of plant stoichiometry

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April 12, 2018

Installation

Install r3PG from GitHub using devtools.

```
install.packages("devtools", repos = "http://cran.us.r-project.org")
library(devtools)
install_github(repo = "griffithdan/plantspec")
library(plantspec)
install_github(repo = "griffithdan/plantspecDB") # data package
library(plantspecDB)
```

Load example dataset

```
# STARTING RESULTS

# BEGIN

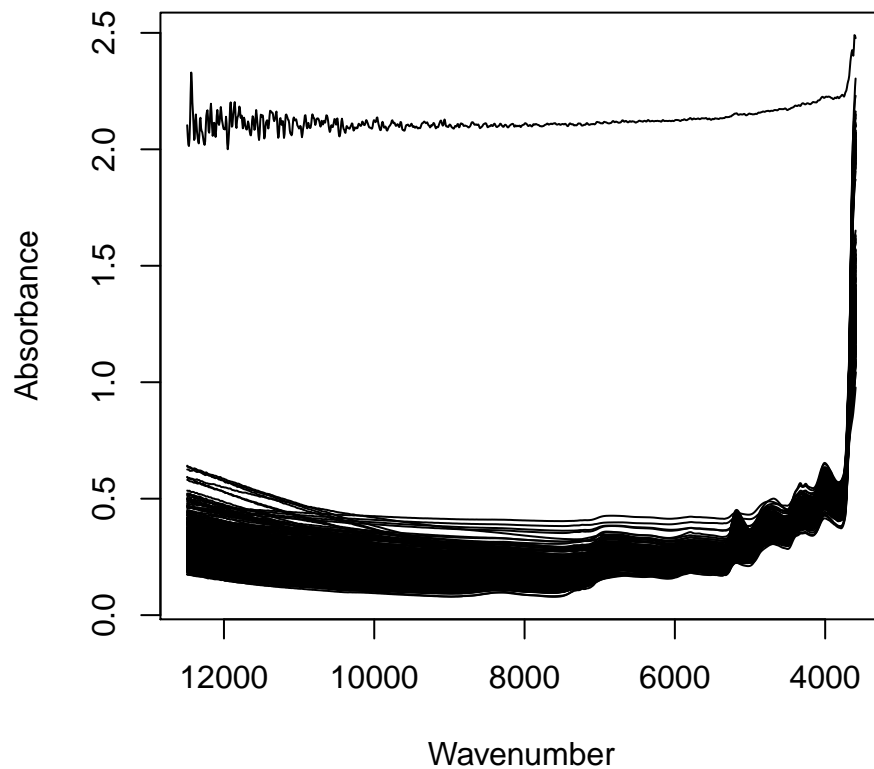
#####
#####
# N: Code to create this calibration
#####
#####
# LOAD DATA FROM leaf.spec.DB
data(leaf.spec.spectra) # CHANGE NAMES
data(leaf.spec.data)
leaf.spec.data <- leaf.spec.data[leaf.spec.data$VERSION==1,] # use dataset version 1
table(leaf.spec.data$FUNCTIONAL_TYPE)
table(leaf.spec.data$YEAR)
table(leaf.spec.data$SITE_NAME)
table(leaf.spec.data$SITE_COUNTRY)

# ADD DISCUSSION OF SUBSETTING
leaf.spec.data <- leaf.spec.data[!is.na(leaf.spec.data$N),] # remove data where response is NA
leaf.spec.data <- subset(leaf.spec.data, !(FUNCTIONAL_TYPE=="bryophyte"))
leaf.spec.data <- subset(leaf.spec.data, !(FUNCTIONAL_TYPE=="litter"))

#leaf.spec.data <- leaf.spec.data[!(leaf.spec.data$FUNCTIONAL_TYPE=="bryophyte"/leaf.spec.data$FUNC
#ADD PLOT BEFORE HERE THAT IDs this spec
leaf.spec.data <- subset(leaf.spec.data, SCAN_FILE != "SCAN_00225.dpt ")

NUTNET_SCANS <- leaf.spec.spectra[leaf.spec.data$SCAN_FILE,] # choose scans based on remaining data

plot(NUTNET_SCANS) # inspect scans #ADD BOKEH PLOTTING
```



```
#component_N <- leaf.spec.data$N # for clarity, put the response in a new vector  
#training_set_MDKS <- !(subdivideDataset(spectra = NUTNET_SCANS, component = component_N, method =  
#N_opt <- optimizePLS(component=component_N, spectra=NUTNET_SCANS, training_set = training_set_MDKS  
#N_cal <- calibrate(component=component_N, spectra=NUTNET_SCANS, optimal_params=N_opt, optimal_mode  
  
#data(N_cal_23SEP2015)  
  
#N_cal$R2_Val  
#plot(N_cal)  
  
#predict(N_cal, newdata = leaf.spec.spectra)
```