pairs (with panel functions)

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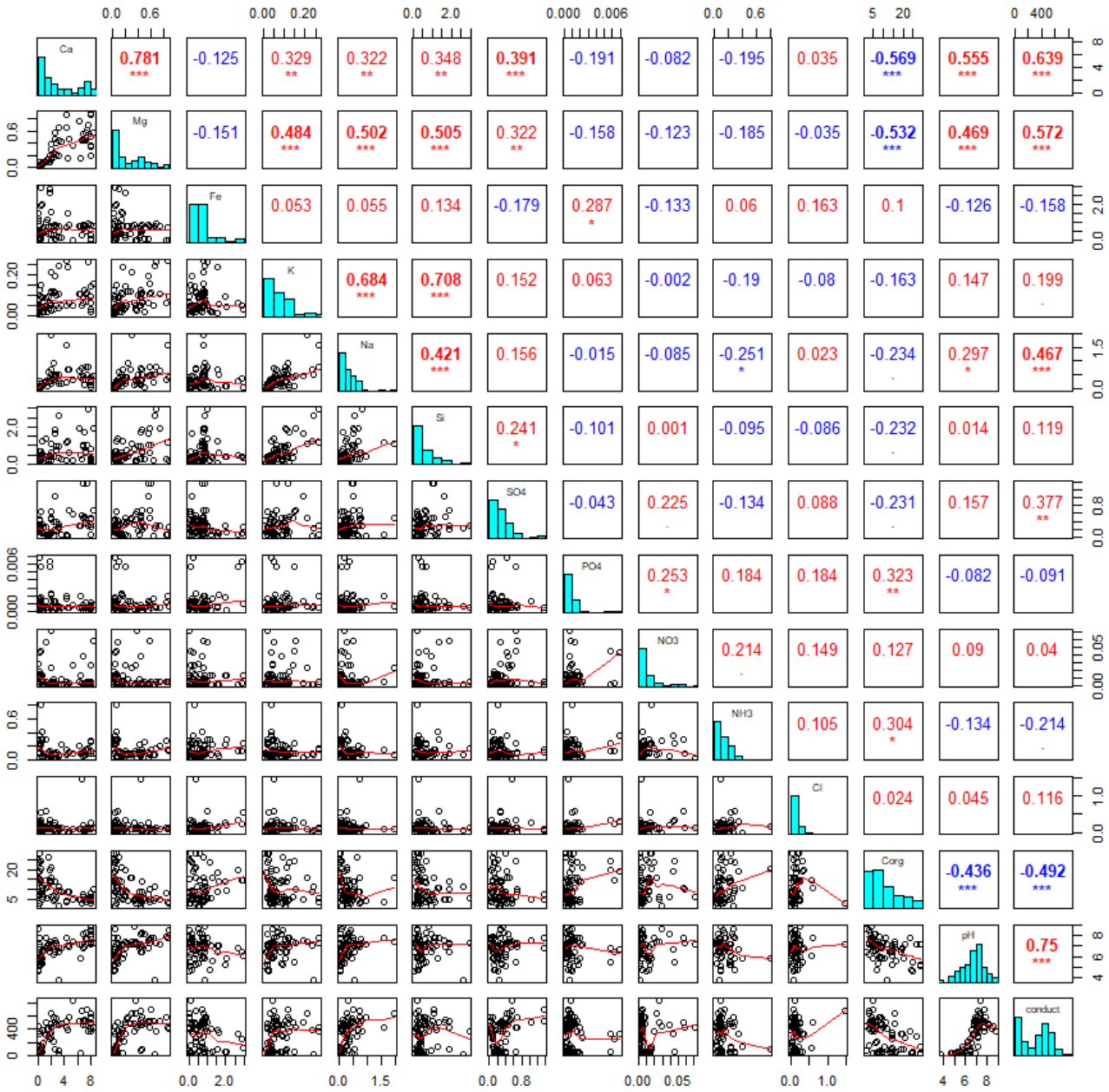
Draws an advanced pairplot (see example below). Based on the base function `pairs`, with original code written by R-core members and panel functions added by Francois Gillet.

To define the function, source the `panelutils.r` file from the book *Numerical Ecology with R*:

```
source
('https://raw.githubusercontent.com/zdealveindy/anadat-r/master/scripts/NumEcolR2/panelutils.R')
```

Example of use (using environmental data from the dataset Vegetation of Carpathian wetlands, after removing the 15th variable which is slope and not water chemistry):

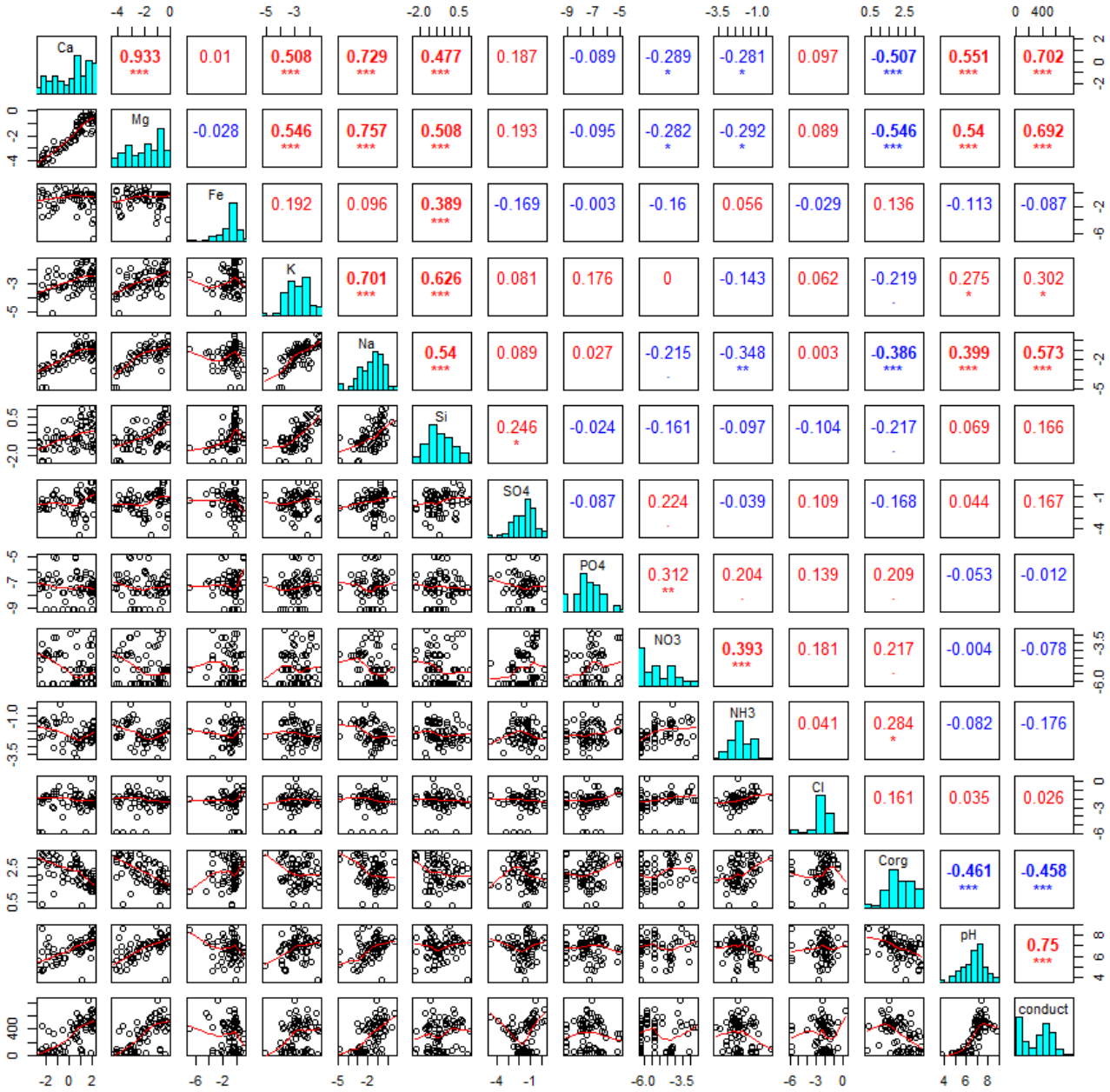
```
source
('https://raw.githubusercontent.com/zdealveindy/anadat-r/master/scripts/NumEcolR2/panelutils.R')
chem <- read.delim
('https://raw.githubusercontent.com/zdealveindy/anadat-
r/master/data/chemistry.txt', row.names = 1) # reads the ''chem'' dataset
pairs(chem[,-15], lower.panel=panel.smooth, upper.panel=panel.cor,
diag.panel=panel.hist)
```



Panels in the upper-right triangle list correlation coefficients and their significance (displayed by the number of stars), where red indicates positive relationships and blue indicates negative relationships; values in bold are significant at P < 0.05. Panels on the diagonal include the names of variables and histograms of value distribution. Panels on the lower-left triangle show scatterplots with a loess smoother curve.

Most of the variables need to be log-transformed (they have a heavily right-skewed distribution); after the log-transformation, the result looks like this:

```
chem_t <- chem
chem_t[, 1:12] <- log (chem[, 1:12])
pairs(chem_t[,-15], lower.panel=panel.smooth, upper.panel=panel.cor,
diag.panel=panel.hist)
```



Note: *Consider using function* `ggpairs` *from the package* `GGally` *(much fancier ggplot2 version of* `pairs` *function). There exists also an older package* `car` *that contains the function* `scatterplotMatrix`*, which behaves similarly to* `pairs` *(but is rather outdated).*

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