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## Variation partitioning (constrained ordination)

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### R functions

- **varpart** (library vegan) - variation partitioning (using RDA, CCA or db-RDA) among up to four matrices of environmental variables. First argument (Y) is dependent variable, usually the matrix of species composition (the function calculates RDA, or, if `chisquare = TRUE`, CCA), but could be also only a single variable (in that case it calculates linear regression) or distance matrix (applying db-RDA using the function `capscale`). Further arguments (up to four) are (groups of) explanatory variables. The function uses either formula interface (with `~`, see [examples](#)) or matrices. The interpretation should be based on adjusted  $R^2$ , although raw  $R^2$  is also reported (for CCA, adjusted  $R^2$  is calculated by permutation method of Peres-Neto et al. 2006 and may slightly vary between re-analyses of the same data; the argument `permutations` specifies the number of permutations used to calculate adjusted  $R^2$  in CCA).
- **plot.varpart** (library vegan) - draws Venn's diagram with fractions of explained variation. In default setting it doesn't show negative values of explained variation (argument `cutoff = 0`). The function can use arguments of `showvarparts` below, e.g. to add the labels for individual (groups of) variables (`Xnames`), or colors of the fractions (`bg`). Consult `?plot.varpart` for more details.
- **showvarparts** (library vegan) - draws schema of Venn's diagram with codes of individual fractions.

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