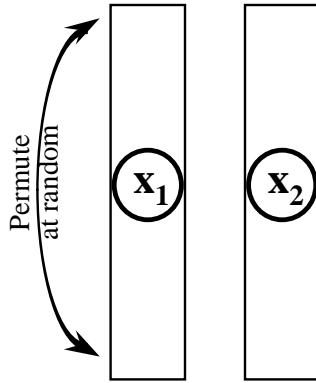


Tests of significance using permutations

The sampling distribution of the statistic(s) is obtained by permuting at random the rows of the first vector or matrix and recomputing the statistic(s).

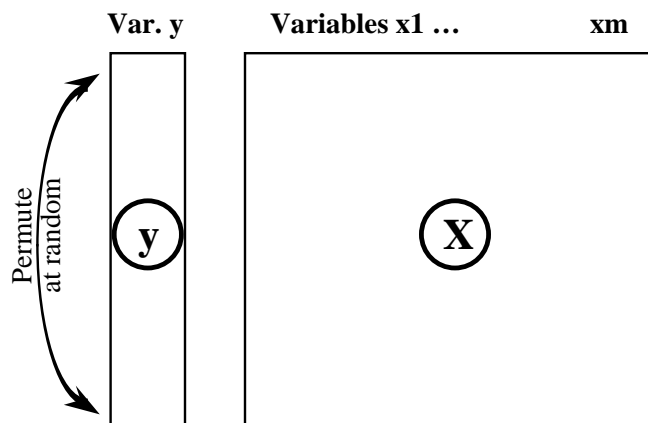
The test of significance consists in comparing the reference (unpermuted) value of the statistic to the sampling distribution obtained by permutation.

I - Correlation between x_1 and x_2 :



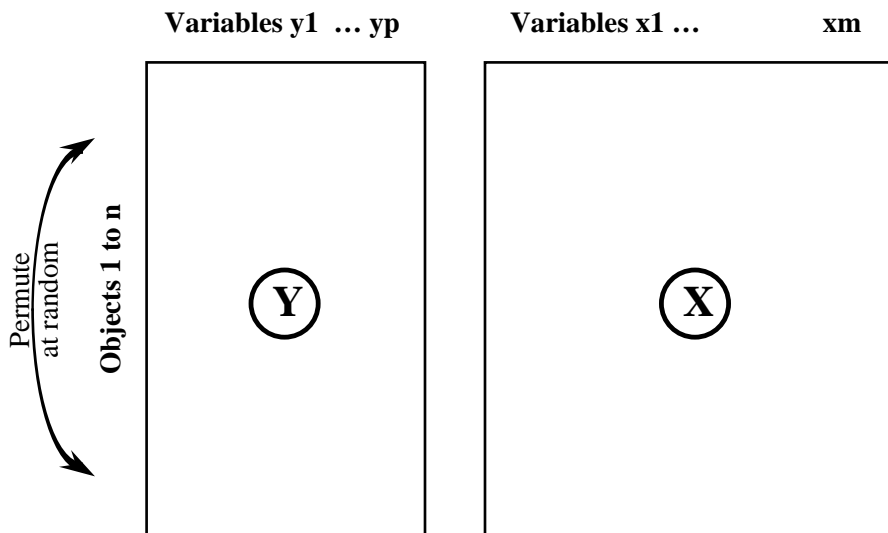
Statistic: Pearson r or nonparametric correlation coefficient

II - Multiple regression:



Statistics: R^2 and regression coefficients

III - Canonical analysis of Y by X (constrained ordination):



Statistics:

- R^2 proportion of variation of Y explained by $X \Rightarrow F$ statistic
- First canonical eigenvalue