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Analysis of community ecology data in R program

David Zelený & Ching-Feng Li, Masaryk University Brno, Czech Republic

Powerpoint presentation: [multivariate-intro2.pdf](#)

Three and half days course held in Rome and organised by Prof. Alicia Acosta and taught by David Zelený & Ching-Feng Li (Masaryk University Brno, Czech Republic). The class is an introduction to analysis of multivariate community data in R program, mostly ordination and classification. Class will have a form of computer labs and it will be combination of short theoretical parts about particular analytical method and direct application of these methods on ecological datasets in R program.

Dates: April 2-5, 2013

Location: Dipartimento di Scienze, V.le Marconi 446, Rome

Language: English

Registration: open till March 28th

For details and registration, please contact Prof. Alicia Acosta (acosta@uniroma3.it)

Flyer can be downloaded [here](#)

Schedule

April 2, 14:00-17:00 **Brief introduction to the R program.** Basic manipulation with data in R, installation of libraries, import and export of data, data objects (vector, matrix, data frame and list). Not necessary for students who are already familiar with R program.

April 3, 10:00-13:00 **Preparation of ecological data for analysis, ecological similarity.** Types of data, standardization, transformation, dummy variables. Introduction to the theory of ecological similarity, resemblance indices and how to calculate them in R.

April 3, 14:00-17:00 **Numerical classification.** Introduction to the theory of numerical classification, cluster algorithms, how to draw cluster dendrograms.

April 4, 10:00-13:00 **Ordination analysis 1.** Brief introduction to the theory of ordination analysis, basic unconstrained ordinations (PCA and CA, DCA), distance-based ordination method (NMDS), and drawing ordination diagrams.

April 4, 14:00-17:00 **Ordination analysis 2.** Constrained ordination analysis (RDA, CCA), stepwise selection of environmental variables, variance partitioning, adjusted R², Monte-Carlo permutation test.

April 5, 10:00-13:00 **Alpha and beta diversity.** Analysis of alpha and beta diversity, rarefaction

curves, indices of alpha and beta diversity.

April 5, 14:00-17:00 Time for discussion, more advanced methods for interested participants.

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