CoDaWork 2011: 4th international workshop on **Compositional Data Analysis**

Girona, Spain May, 2011

Universitat de Girona

Dpt. Informàtica i Matemàtica Aplicada c/Universitat de Girona s/n E-17071 Girona (Spain)

Technical secretariat: CIMNE International Center for Numerical Methods in Engineering c/Jordi Girona 1/3 E-08034 Barcelona (Spain)

CIMNE

UNIVERSITAT POLITÈCNICA DE CATALUNYA

Dpt. Matemàtica Aplicada III c/Jordi Girona 1-3, E-08034 Barcelona (Spain)

On compositional data and other constrained spaces:

Compositional data (CoDa) are typically defined as vectors of positive components and constant sum, usually 100% or 1. These conditions render most classical statistical techniques useless on compositions, as they were devised for unbounded real vectors. However, there are many more types of data having the same limitations: as soon as the variables of a data set show the relative importance of some parts of a whole, data must be considered compositional. Examples of disguised compositions are data presented in ppm, ppb, molarities, or any other concentration units. Aitchison introduced the log-ratio approach to analyse CoDa back in the eighties. His solution was based on transforming the data vector with some log-ratio transformations, and applying classical techniques to the scores so obtained. This became the foundation of modern CoDa analysis, nowadays based on an own geometric structure for the simplex, the sample space of CoDa.

The validity of these considerations is not restricted to CoDa: there are many more data sets which sample space is not obbeying the rules of real numbers, or that can be given an own, alternative, meaningful geometric structure. Examples abound in the natural and social sciences: vectors of positive amounts, functional data, spherical data, ordered variables, etc. CoDa analysis insights may be of good use to scientists working with these data sets, and vice versa.

CoDaWork 2011 offers a forum of discussion for people concerned with the statistical treatment and modelling of compositional data or other constrained data sets, and the interpretation of models or applications involving them.

On the workshop topics:

The main goal of **CoDaWork 2011** is to identify important potential lines of future research and gain insight as to how they might be tackled. We intend to bring together researchers, postgraduate students, as well as those with an interest in the field to share crucial contributions and recent developments. One of the most enriching characteristics of preceding workshop editions was their multidisciplinary approach. We keep it, and welcome contributions about:
• theory and methods,
• applications to life sciences and medicine,
• applications to economy, official statistics and social sciences,
• applications to earth and environmental sciences,
• and new teaching and computing tools,
as well as any other field of application where compositions or data from constrained spaces appear.

However, we plan to give **CoDaWork 2011** a new aspect by choosing two transversal hot topics, like e.g.
• how to deal with count compositions,
• irregular compositions: outliers, zeros, missing values,
• (when) are logs valid simplifications of log-ratios?
• bayesian models for compositions,
• dealing with compositions and other variables together,
• multi-way and ordered compositions.

All hot topic proposals are collected in the website. If you have any topic suggestion, please send us an e-mail! During the first months of 2010 a poll will be conducted, and the chosen topics will be published in the second circular. Participate by sending your vote per e-mail!

Important dates:

call for papers and circular 2:	Jun. 1, 2010
abstract due:	Nov. 1, 2010
notice of acceptance:	Dec. 1, 2010
early registration due:	Feb. 15, 2011
circular 3:	Feb. 15, 2011
full paper due:	Mar. 1, 2011
course	**May, 9-10, 2011**
workshop	**May, 10-13, 2011**

On the venue:

The workshop will take place in Sant Feliu de Guíxols. Sant Feliu is a beautiful, old town in a privileged, sheltered location at the Costa Brava, the grand, rocky coast of the province of Girona.

The workshop and the traditional previous introductory course will take place in a hotel. Attendants are encouraged to stay at the hotel, to stir discussion and social life. The organisation guaranteees very attracctive prices.

Sant Feliu can be reached by bus from Barcelona and Girona bus stations, as well as from Girona-Costa Brava Airport.

codawork@cimne.upc.edu   http://congress.cimne.com/codawork