Call for Papers for a Special Issue on

Multimode clustering and its applications

The journal *Advances in Data Analysis and Classification* will publish a Special Issue on **Multimode clustering and its applications**

Cluster analysis is an important tool in a variety of scientific areas including, e.g., pattern recognition, economics, bioinformatics, document clustering, and information retrieval. While classical clustering procedures, either hierarchical (Ward) or partitioning (k-means) ones, construct an optimal or appropriate grouping of objects or, sometimes, of variables, there are practical problems where we need the simultaneous clustering of objects and variables (rows and columns of a data matrix), with suitable generalizations for multi-dimensional data matrices. Corresponding clustering methods are known under keywords such as multimode clustering, co-clustering, latent block models, bi-clustering, etc.

In recent years multimode clustering has become an important challenge, e.g., in market-basket analysis, text mining, microarrays and recommender system analysis. In document clustering it makes use of the obvious duality between the rows (documents) and the columns (words) of a binary indicator matrix. In the analysis of microarray data, where data are often presented as a matrix of expression levels of genes (rows) under different experimental conditions (columns), co-clustering of genes and conditions will provide meaningful gene and condition clusters without the necessity to define similarities among the members of the two different modes (as some conventional clustering methods are doing).

A large variety of methods has been proposed for finding multi-mode patterns in data matrices. These procedures differ with respect to the pattern (characteristics) of classes they seek, the types of data they apply to, the (eventually probabilistic) assumptions on which they rest, the optimality criteria that are formulated, and the set-theoretical structure of class formation (blocks, plaids, concepts,…).

This Special Issue of the journal ADAC intends to collect original scientific articles that propose and discuss methods related to multi-mode classification, investigate corresponding models, methods, and algorithms, and propose new and innovative applications, e.g., in bioinformatics, economics, text mining, document retrieval etc. In this basic context it could be interesting also to consider related aspects such as neighbour-based approaches, large data sets and high dimensionality, model selection, low rank decomposition and nonnegative matrix factorization, ensemble methods, and visualization.

**Submission details:** The full paper should not exceed 15 pages (A4 or Letter size with 12 point), including illustrations and tables. The front page of the manuscript must contain a concise and informative title, the names, affiliations, postal and e-mail addresses of all authors, telephone, and fax number of the corresponding author, an abstract of 8–10 lines, and 4–6 keywords which can be used for indexing purposes. Further formatting instructions are given on the journal’s homepage [http://www.springer.com/journal/11634](http://www.springer.com/journal/11634). The manuscript should be electronically submitted as a pdf file by Springer’s Editorial Manager on the ADAC website and qualified as a paper for this special issue.

**Important dates:**
- Submission of manuscripts: June 30, 2013 (earlier submissions are explicitly encouraged).
- Notification to authors after reviewing: September 30, 2013 (tentative).
- Final papers for the Special Issue: February 1, 2014 (tentative).